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ORIGINAL ARTICLES

OPSONINS AND VACCINES IN TUBERCULOSIS.*

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The discovery of opsonin and the usage of the opsonic index has illuminated many clinical conditions hitherto almost inexplicable. Residing in a resort largely frequented by tuberculous invalids, my first thought, on returning from Wright's laboratory about eighteen months ago, was to ascertain if this new light might illuminate the cause of Colorado cures, or at least the reason apparent benefit befalls the newly arrived tuberculous individual.

Considering the changed conditions in high altitudes which become physiologic factors in a patient's progress, such as the increased radioactive emanation, rarefaction of the air, the abundance of violet rays, and Becquerel rays, the dryness and coldness of the air, and especially the long duration of sunshine, which, apart from its physical influence, determines so great a physical effect, *"Dove non entra il sole, entra il medico,"* as the Italian proverb has it, with the resulting erythema, if one may here use the term to express the increased red corpuscles and increased hemoglobin, physiologic facts confirmed by the hyperemic marrow findings of Loewy and others, an increased opsonic power of blood serum naturally suggested itself.

Jessen,[1] of Davos, reported an increase of the agglutination power in the blood of people coming from the lowlands after a short stay in the Swiss Mountains; observations which, if corroborated, would suggest a certain opsonic increase. In order to test this question, nine healthy men were sent to the summit of Pike's Peak, over 7,000 feet higher than Colorado Springs, and kept there for a week. Their blood specimens in Wright's capsules were daily brought to me either by carrier pigeon or by one of the number returning. The indices of these men had been deter-

* Read before the Chicago Medical Society, Feb. 26, 1908.

1. Jessen, F.: Davos. Agglutination bei Lungen Tuberkulose; Beiträge zur Klinik der Tuberkulose, Wursburg, vi, No. 1.

mined to both the tubercle bacillus and to that variety of staphylococcus known as the *Micrococcus neoformans* of Doyen, several times before departure.

With two exceptions, these results had been uniform; these two, however, were low. It may be of interest to know that one of these subjects had been somewhat dissipated at the time, and the other was the only one who succumbed in the climb, fatigue having completely overcome him, so much so that his companions had to prod him and carry him to prevent him lying down in the snow to die. This unfortunate fellow, of evident lower vitality than the remainder, was brought down after two days with badly frozen feet. The blood specimens brought by the carrier pigeons were all jellified and, therefore, I felt that the results from these would not be quite fair in comparison with the controls. The pigeons arrived within an hour or two after obtaining their freedom.

The jellified bloods brought by the pigeons all yielded low indices to both organisms; the blood brought down by hand gave results which were all within the normal limits of from .8 to 1.2, showing no gains over the early observations. In all, ninety opsonic indices were made. These tests were corroborated by taking the indices of two men who worked on the Peak the whole summer. Estimation of the bactericidal power of the serum of some of these men to the typhoid bacillus also seemed to indicate no gain, although the method employed, which was that of Wright, is open to criticism.

These observations accord with some made on patients arriving from the East and from Europe, in whom I have several times found a similar low opsonic index to tubercle on arrival in Colorado Springs and for months following, as that observed by their former physicians. These results are by no means conclusive, the peak experiments especially being of short duration, but should it be confirmed that residence in, or change to a high altitude does not increase opsonin, other reasons must be sought to explain some of the beneficial results.

My observations of the opsonic indices of 50 cases of arrested and apparently cured cases of pulmonary tuberculosis have been invariably low, yielding a variation of from .5 to .9. It is perhaps probable that advantageous climatic conditions have enabled these patients to make the most of their low indices, allowing apparent cures, although Wright doubts if any person can be cured of any form of tuberculosis with a low index.

The question of auto-inoculations with their good or bad influences presents itself. Are these or their harmful possibilities minimized by the climate? According to Professor Bürker, blood coagulates rather more quickly in the mountains, and with a higher coagulable blood less lymph exudes to bathe tuberculous foci, so that less toxic lymph is returned to the circulatory blood. This can in itself tend to moderate auto-inoculations. A possible condition which might moderate the damages of auto-inoculations is the increased rate of tissue change. It is conceivable that the receptor cells, being kept in a more vigorous condition, would suffer less from the flood of positive and negative phases,

due to both tuberculous products and the products of mixed infections, in which the phthisical patients are apt to be so constantly bathed. I have little to offer to bear out these ideas.

I observed in London one patient with pulmonary tuberculosis who repeatedly met with disaster from being allowed to get up. I made repeated opsonic indices and one day found the tubercle index to be .5 before exercise, .7 after exercise, and the next day 1.64. This patient came to Colorado Springs and her index was many times observed, always keeping at .85 and .9 in spite of being allowed constant freedom with moderate exercise.

As is well known, most tuberculous patients on arriving in Colorado are kept at rest, usually in bed for from one to several weeks. This in itself will often transform a general infection into a local one. Fever is arrested and weight is gained. The question then arises, Can the patient get up? All clinical conditions being favorable the patient is allowed to get up, but is carefully controlled. Within a few days this patient may return to bed, suffering from an acute exacerbation or hemoptysis. Just here will be found a useful application of opsonic determination. Observation of clinical conditions with no special regard to the rectal temperature will not accurately foretell disaster. I believe a fluctuating index will. In a patient several times a victim of relapse who has avoided further trouble since a study of indices guided me, I found that his tubercle opsonic index at 10 a. m. in bed was .9; 11 a. m., having dressed and walked to office, 1; 7:30 p. m., 1. There being no change in his index, the equivalent of this amount of daily motion was allowed, and progress has been continuous.

In a patient recently considered cured of tuberculous septicemia, and who had suffered a relapse on being allowed to get up, opsonic observations were made. At 10 a. m., .9; patient allowed to get up, dress and take automobile ride; at 12 p. m., .8; at 6:30 p. m., .9. The temperature, which had been normal, rose at 3 p. m. to 99 3/5, but by night was again normal. There being no fluctuation in the index, the slight degree of fever was considered to have been brought about by the nervous excitement. This patient has been allowed the same daily liberty and has suffered no further relapses.

The question of studying and applying auto-inoculations has, as you know, been recently very thoroughly worked out in England by Patterson[2] and Inman.[3] Thereby a turning point has probably been marked in the treatment of the tuberculous invalid, converting him into a useful worker instead of into a useless loafer, which latter seems to me to have been an end accomplished too often by most sanatorium work.

The beneficial results of many German and Swiss sanatoria have been, I take it, due to the skilful manipulation of empirical auto-inoculation. I noticed in Nordrach, in Davos, and at the Alland Sanatorium near Vienna that patients were made to take graded walks directly after

2. Patterson, M. S.: Graduated Labor in Pulmonary Tuberculosis.
3. Inman, A. C.: Effect of Exercise on Opsonic Index of Patients Suffering from Pulmonary Tuberculosis, Lancet, London, Jan. 25, 1908.

meals. I was puzzled to understand why this time of day was chosen, and it struck me that the reason must be that auto-inoculation might be less detrimental and more beneficial at such times. Naturally if the receptor cells are occupied in the absorption of nourishment, constitutional symptoms due to toxins are less likely to occur. I have myself observed a very small dose of tuberculin inoculated into a fasting patient to have caused a reaction, whereas the same dose given several times before, but following a meal, had never done so. The reason different degrees of negative phase following vaccine inoculations have been found by different workers may lie herein.

A homely instance of such toxic effect is the feeling resulting to the unaccustomed from smoking tobacco before breakfast. When Patterson and Inman recently read their papers before the Medical Society of London, Wright criticised the skilful use of auto-inoculations as being less under control than the exact method of inoculating tuberculin. According to my experience in arrested cases auto-inoculations fail after a certain period, unless ultra violent exercise be taken. When a patient arrives at this state, it is very necessary to use tuberculin if an ultimate cure is to be obtained.

I now wish to speak to you in regard to opsonins and the opsonic index in tuberculosis. Firstly, in regard to the term "opsonin." Bill, of Davos, recently wrote to me that he could find no reference to support Wright's translation of "opsono" into "convert into palatable pabulum." He claims that the stock use of the word refers to "purveying" and not to preparation of food. In looking up "opsonium" I have found it to mean a "relish," and a relish can certainly convert into palatable pabulum!

That phagocytosis is an important rôle in tuberculosis is denied by Theobald Smith,[4] but asserted by Wright,[5] Baldwin,[6] Hektoen,[7] and others. Opponents have suggested that, because the blood fluids in the neighborhood of tuberculous foci are often deficient in opsonin, opsonin is not a factor in the conquest of the tubercle bacillus. This deficiency is more than probably accounted for by the fact that the tubercle bacilli have disarmed the opsonin in their neighborhood. Analogy may be found in the spleen of typhoid patients, the serum from which is apt to have less agglutinating qualities than that possessed by the circulating blood. Also, bacteria prefer to live in areas of lessened bacteriotropic pressure.

A thorough study of phagocytosis in sputum with its occurrence in 80 per cent. of specimens[8] reveals a picture only a little less than that obtained with the influenza or the gonococcus. If the Gram stain is applied to sputum even more phagocytosis may be observed than with

4. Smith, Theobald: Journal American Medical Association, April 28, 1906.
5. Wright, A. E.: Royal Society Proceedings, vol. 72-73.
6. Baldwin, E. R.: Mechanism of Resistance in Tuberculosis, before Philadelphia Pathological Society, May, 1906.
7. Hektoen, Ludvig: Journal American Medical Association, May 12, 1906.
8. Allen, A. H.: Phagocytosis, etc., in Sputum as a Measure of Resistance in Tuberculosis, Third Annual Meeting National Association for Study and Prevention of Tuberculosis.

the carbol fuchsin method, and in order to explain the reason of this I must here digress somewhat. In examining the contents of a tonsil excised from a perfectly healthy lad of healthy parentage I found with the carbol fuchsin methylene blue stain a few tubercle bacilli. Examining a slide of the same pus, smeared at the same moment, but stained by the Gram method, I found very large numbers of a Graming bacillus, but perhaps more granular and slender. It struck me as curious that these could not be observed even counter stained by the methylene blue in the first preparation. I was at a loss to interpret these slides until reading articles by Much[9] concerning a form of the tubercle bacillus which was not acid fast. This writer proved the point fairly conclusively that the tubercle bacillus is frequently present and can be demonstrated by the Gram stain, when it can not by the carbol fuchsin method.

However, Klebs (E.) was the first as far back as 1904 to call attention to their presence in tuberculous foci, and especially laid stress on the importance of the tubercle bacillus being overlooked in organs or in expectoration because of the absence of acid-fast qualities. After a perusal of Much's articles, I began to wonder whether the tubercle bacillus develops its waxy capsule, if such term may be applied, as a defensive procedure, and whether the defensive machinery of the body deprived it of this waxy capsule in the efforts aimed at its destruction. If the latter were the case it might be illuminated by the method of the opsonic index, and the result might tend to throw some light on the inaccuracy of the tubercle opsonic index. First let me ask in what kind of bloods opsonic discrepancies are most marked. It is generally conceded that normal bloods in the large percentage of cases will agree. It is also beyond doubt to those daily engaged in this work that sub-normal bloods in absence of auto-inoculations are apt to be always sub-normal. It is in highly immune bloods that observers disagree. It was the case in the experiments of Wright soon to be mentioned.

In observing typhoid opsonins I have always failed to get an index much above normal with highly pathologic serum, although the same serum diluted 100 times would provoke marked phagocytosis, whereas normal serum diluted twice or thrice would lose all this power.

A series of disappointing indices following inoculations of tuberculin, similar to the following, has been a common occurrence with me in cases of tuberculous glands:

Miss A., aged 25. Tuberculous cervical glands three years; three operations. Two discharging sinuses.

	Opsonic index.
Before inoculation	.8
Koch's new T.R., 1/10000 milligrams	1.
Koch's new T.R., 1/5000 milligrams	—
Koch's new T.R., 1/3500 milligrams, four days later	.7
Koch's new T.R., 1/2500 milligrams, three days later	.95
Koch's new T.R., 1/1500 milligrams, four days later	.87
Koch's new T.R., 1/2000 milligrams, three days later	1.4
Koch's new T.R., 1/1500 milligrams, five days later	.75*
Koch's new T.R., 1/1500 milligrams, six days later	.48

* Has gained 7 pounds. Wounds all healed. Glands scarcely palpable.

9. Much: Uber die vicht Säurefesten Formen des Kochschen Tuberkelbazillus; Beiträge zur Klinik der Tuberkulose, Würzburg, Band vii, Heft 1 und Heft iv.

Eight inoculations were given following these, and the index was never again found above .8 or .9, although improvement continued. No glands could be detected, apparently complete cure had resulted. It is important to note that only on one occasion was there a high reading of the index. Were the others then really low or only apparently low?

Mitchell of Denver, who worked in Wright's laboratory the past summer, told me that following the adverse criticism regarding the accuracy of the opsonic index in this country Wright undertook a series of experiments. About six men working in his laboratory were given a series of healthy and pathological sera, the work was done in a blind manner so that no worker knew which were normals and which pathological, and each had to work them out just as if they were in different cities. The results were very disappointing, the only redeeming feature being that all the subnormals and normals agreed. As to the highly pathologic sera, it was impossible to tell a negative from a positive phase from the results handed in, and the errors reached from 10 to 40 per cent.

Following up my observations on the pus from the tonsil I have above narrated, I decided to Gram, as well as to carbol fuchsin and decolorize, each series of opsonic observations, and I will read you some of the results:

	Gram.	Per cent. empty leucoc.	Carbol fuchsin.	Per cent. empty leucoc.
Case 1—Pulmonary tuber. with probable tuber. testis, tuber. o. i	1.5	26	.7	36
Case 2—Pulmonary tuberculosis, 6 days after inoc.	1.5	24	.9	26
Case 3—Pulmonary tuberculosis, 5 days after inoc.	1.3	10	.9	16
Case 4—Tubercle septicemia, 4 days after inoc.	1.1	15	1.1	16
Case 5—Pulmonary tubercle, 10 days after inoc.	.9	2	.9	8
Case 6—Pulmonary tubercle, 10 days after inoc.	1.3	No	.9	8
Case 7—Pulmonary tubercle, 10 days after inoc.	.8	6	.9	6
Case 8—Pulmonary tubercle, 10 days after inoc.	.9	4	1.1	6
Case 9—Pulmonary tubercle, 5 days after inoc.	.1	6	.9	6
Case 10—Pulmonary tubercle, 7 days after inoc.	1.0	2	1.0	4
Case 11—Pulmonary tubercle, 10 days after inoc.	1.1	4	1.1	4
Case 12—Pulmonary tubercle, 20 miles horseback ride day before	.6	14	.8	4
Case 13—Pulmonary tubercle, 3 days after inoc.	1.2	No	.9	8
Case 14—Pulmonary tubercle, 6 days after inoc.	.8	10	.1	4
Case 15—Pulmonary tubercle, 10 days after inoc.	.6	10	.6	6
Case 16—Pulmonary tubercle, 3 days after inoc.	1.1	8	.8	8

These opsonic indices collected from three sets on three different days were worked out by the blind method, that is to say, the incubating and counting was done in absolute ignorance of which sera were normals and which were pathologic. You have probably noticed that almost without exception when the indices should be high on the third to fifth day after inoculation the carbol fuchsin method gave low indices, whereas the Gram gave high. With but one exception, the percentage of empty leucocytes in the low carbol fuchsin counts was greater than in the Gram. In the actual count of bacilli within the leucocytes the carbol fuchsin slides read higher. The explanation of this is no doubt due in part to the destruction of the red cells by the acetic acid in the former method, whereby the edges and prolongations of the leucocytes could be more easily seen than in the Gram method. The

erythrocytes take the Gram stain and are packed closely around the leucocytes. We found that if neutral red is used as a counter stain to the Gram the nuclei of the leucocytes are almost transparent, allowing the black bacilli to be seen through them. These observations if corroborated will show that the staining method in use for tubercle indices will have to be changed. The Gram stain is difficult to work with, and I would not be surprised that even this stain may omit certain bacilli both before and following opsonic action. We are by no means satisfied with the Gram stain as a stain capable of displaying all tubercle bacilli, and we are testing for a stain capable of demonstrating all or almost all the bacilli, whatever their stage of development or of destruction.

The reason observers in different quarters have been more satisfied with the accuracy of the opsonic index in tubercle work than others may be due to the fact that different strains of tubercle used as emulsions have had different degrees of resistance to lysin, to opsonin and leucocytic action in regard to staining qualities.

It has long been known[10] that in young cultures there may be many tubercle bacilli which were not acid fast. Thinking this might be the case in my own emulsion, I made the following test, which I would suggest as a valuable one, not only for similar observations, but for ascertaining if opsonins alone can alter the coat of the tubercle bacillus. The emulsion was treated as a vaccine and mixed with blood for counting according to Wright's method. Two slides were simultaneously spread, one stained with carbol fuchsin and decolorized with 2.5 per cent. sulphuric acid and counter stained with methylene blue, the other stained by Gram method. The count came out nearly the same, the error being in favor of the carbol fuchsin.

The result of this test of the emulsion would, therefore, indicate that there were no non-acid fast bacilli present, but that the lytic opsonic and leucocytic action were alone responsible for the changes in the index above described. We have lately grown on Hesse's medium containing Heyden's Nährstoff an involution form of the tubercle bacillus which can not be stained by the carbol fuchsin method, but which on decoloration will take the methylene blue counterstain.

Is it the power or number of leucocytes that is most important? Or the power, and not necessarily the amount of opsonin, that is absent in blood unable to throw off disease? What is the application of the situation in the case of gonorrhea in which dead leucocytes are found crowded with gonococci, and yet the opsonic index to this organism is low?

The influenza bacillus may need no opsonin for its phagocytosis, and the examination of the influenza pus reveals a similar situation to that of the gonococcus pus. The picture in tuberculous sputum is but little less. Does the increased amount of opsonin which is said to be necessary to overcome bacteria necessitate an increase of lytic action before the leucocytes can digest their prey? Is opsonic action perhaps not largely lytic? The inoculation of gonococcus vaccine, producing a cure in such

11. Courmont: Precis de Bacteriologie.

a case, would hardly be expected to strengthen the patient's leucocytes, and yet these now instead of dying are able to conquer and to digest the bacteria. No doubt in most opsonic work the digestive capabilities of the white blood corpuscles have been lost sight of and rarely considered, and even with full opsonic and lytic action some are still unable to destroy their prey after capturing it. Perhaps this failure is due to overloading.

Increase of opsonin and agglutinin can very easily be conceived to lead to an overloaded digestive power of a leucocyte causing a suicide from over-indulgence, for which analogies are not far to seek. The wisdom of considering nuclein administration as an adjunct to vaccine inoculation might not be amiss in many cases.

In the last few months 225 sputum examinations have been made, of which approximately over 75 per cent. contained tubercle bacilli. Each sputum was spread simultaneously on three slides, and one slide was stained by the carbol fuchsin methylene blue method, the next by the Gram, and the next by carbol thionin, as a routine measure. By means of these stains one gets very familiar with the mixed organisms in tuberculous sputa. One meets with the Friedländer, the colon, the pseudo-diphtheria and the influenza bacilli. Rarely other forms of bacilli.

We have frequently observed granular bacilli morphologically in arrangement comparable to the tubercle bacillus, well stained by the Gram method. We have noticed, too, they often appeared more numerous on the Gram slides than on the carbol fuchsin slides. The carbol thionin stains the tubercle bacillus but indifferently. We use it especially for the detection of the influenza bacillus. In several examinations in which no tubercle bacilli were present by the carbol fuchsin method Graming rods were found on the Gram slides which an experienced eye could hardly fail to decide were tubercle bacilli. In but rare cases was the reverse of these observations true, that is to say, that tubercle bacilli were found in the carbol fuchsin slide and not in the Gram. These observations in conjunction with the above mentioned work would indicate that a negative examination of sputum for the tubercle bacillus by the present method can not be relied upon. The cause of these sputa findings is more than probably the same as the cause of the opsonic discrepancies.

Using the same method as in examining our emulsion for non-acid bacilli, a series of tests was made with two stains on tubercle bacilli which had been submitted to the action of serum at blood temperature. Normal serum and serum from a tuberculous patient five days after tuberculin inoculation were each mixed with equal parts of the above tested tubercle emulsion and incubated for five, ten, fifteen and twenty minutes. An equal volume of each admixture was then mixed with an equal volume of fresh healthy blood and the whole diluted with a small amount of normal salt solution. Two slides of each were spread and the resulting counts of the ratio between the standard red corpuscles and bacilli showed a progressive decrease in the number of bacilli on the carbol fuchsin slides and on the Gram slides with normal serum, whereas

with the pathologic serum the carbol fuchsin slides gave a gradual decrease in numbers and the Gram slides an increase.

It would seem therefore that the specific lytic action might have the effect of causing the Gram stain to show up bacilli it had previously failed to stain. Of chief importance, however, is the result that even after fifteen minutes—the period usually allowed for the tubercle opsonic reaction—we found a marked decrease in the numbers of bacilli by the carbol fuchsin stain in both normal and pathological sera, as a result of lytic influence.

All the Gram slides averaged fewer tubercle bacilli than were found on the carbol fuchsin slides, and this would indicate either that the Graming erythrocytes obscured many bacilli or that this stain is not able to demonstrate many normal bacilli, the latter being the view I am inclined to. These experiments carried further would suggest the possibility of being able to achieve a *lytic index,* by which to measure one of the protective substances elaborated, an index of much simpler technic than the opsonic, and of especial value in such disease as typhoid when the action of lysin is known to be exceedingly potent. Instead of blood, a constant emulsion of any organism such as staphylococci may be employed, as a guage by which to control the numbers of bacteria submitted to bacteriolysis, and in some respects proves more satisfactory.

In regard to vaccines in tuberculosis, we have used almost entirely Koch's new tuberculin. The initial dose has never been greater than 1/10000 mg. and often as low as 1/100000 mg. A dose which has been shown to be able to produce a positive phase. Upward of 60 cases chiefly of pulmonary disease have been inoculated with gradually increasing doses up to not exceeding 1/800 of a mg. at intervals of from seven to ten days. In all cases preliminary observations have been made upon the opsonic index to eliminate the possibility of auto-inoculations. The index, however, has not been used as a guide to the time for inoculation, but only as a test to ascertain if the inoculation has produced the required effect. The general level of opsonins has been raised, and our results, though not numerous, are in accordance with those of the Agnes Memorial Sanatorium of Denver, which I am allowed through the kindness of Dr. Holden and Dr. Steiner of that institution to give to you. "From 212 indices taken before tuberculin inoculation, we find the average index of .85. From 425 indices taken after tuberculin inoculations we find the average index to be 1.07. These observations were made on 85 cases over an average period of 143 days. In the majority of instances the initial dose was 1/5000 mg. and the maximum dose 1/200 mg."

Dr. Holden tells me he has been more than pleased with the results that have been obtained showing a distinct gain over former results, which combined climatic and sanatorium treatment, without tuberculin inoculation. Improved clinical evidence has, on the whole, coincided with increased opsonic power.

Our own results from inoculation of Koch's new tuberculin have been most favorable. We have seen no bad effects in any case. At the present time it would not be possible to report on the percentage of cures or ar-

rests. Neither has sufficient time elapsed to report continued good health being a sequel. Several moderately advanced cases have been apparently cured. Many seem to have been arrested from an active condition which rest and climate alone could not achieve. Febrile cases have been rendered afebrile, and in some of these it has been a somewhat common observation to see the temperature begin to ascend when the subsequent dose was due and to immediately disappear on inoculation.

Especially when tuberculin has been combined with mixed vaccine, marked alleviation of the cough and of expectoration has been a common result. In a few cases we have employed individual tuberculins, and such I can not but consider may be found best for those cases from which they can be prepared, on account of different strains met with. Later I shall hope to report these cases. Meanwhile I will just remark that we have so far encountered no cold abscesses from the inoculation of the small doses of these individual tuberculin vaccines prepared similarly to other vaccines.

A natural outcome of Wright's exploitation of bacterial vaccines is the application of their use to the concomitant or mixed infections of pulmonary and other forms of tuberculosis. To attempt the cure of cases complicated by secondary infections, by means of tuberculin alone, trusting that the organism will rid itself of these secondary invaders, is hardly rational.

"While the suggestion that mixed infections must be expected in the common suppurative processes which occur in connection with surfaces which harbor microbes, may be universally acceptable as not breaking in on any accepted ideas, the suggestion that mixed infection must perforce be considered in every case of phthisis, lupus, tubercular caries, tubercular cystitis and tubercular ulceration, in the very nature of things, will be unacceptable to many clinicians. Such a suggestion will be felt to throw doubt not only on the clearness of vision of those who have sought for anti-tuberculous remedies in these diseases, but also on the critical acumen of those who, without taking into account the fallacies which are incidental to clinical methods, have confidently undertaken to pass final judgment on anti-tuberculous remedies by the observation of their clinical effects in cases in which, in addition to the tubercle bacillus, other pathogenic microbes may have been at work. Be it acceptable or unacceptable, there is no escape from the fact that practically every case of suppurating lupus is complicated by staphylococcus infection. What holds true of lupus, *mutatis mutandis* is true of every tuberculous affection to which microbes can find access."

It is perhaps a fact that many of these secondary organisms are of low vitality and non-virulent; it is just as impossible for such patients to rid themselves of these as of local infections, such as acne, furunculosis, both such frequent afflictions of the tuberculous. The suggestion has been made that the influenza organism is probably the means of introducing the pneumococcus to a patient the victim of pulmonary tuberculosis, and it is perhaps true, yet my own observations would seem to show that the influenza bacillus alone is capable of much mischief in the

tuberculous invalid. An attempt was, therefore, made during the past epidemic to produce some immunity to this organism by adding a potent influenza vaccine to the weekly inoculations of patients. The results, which will be published in another place, have given much promise.

To those who have watched the almost miraculous disappearance of boils following the inoculation of an homologous staphylococcus vaccine, and who have also seen a pneumococcus pus pouring from an ear disappear entirely in a few days through the exploitation of the appropriate vaccine, it will cause no surprise to learn that comparatively similar results have been obtained in the reduction of sputum of consumptives by the application of similar methods. Vaccines have been made from pure cultures derived from patients' sputa, according to the technic of Wright, and inoculations have been given at intervals of from five to ten days. The doses in all cases have been small to begin with, usually about 20,000,000 of any vaccine, and the amount has been increased to rarely more than 150,000,000. The time of day preferred has been within an hour or two after meals when the receptor cells have presumably been occupied in the absorption of nourishment and constitutional symptoms are at such times less likely to follow.

To ascertain if leucocytes had a preferential appetite for one organism more than for another an experiment was undertaken with the blood of a patient suffering from a mixed infection of tubercle and staphylococcus and who received inoculations for both. The opsonic index to each organism was found to be 1.2. The tubercle and staphylococcus emulsions were then mixed and the opsonic indices again taken, the mixed organisms found in the leucocytes were counted and the index to tubercle found to be 1.1 and that to staphylococcus 1.2. These results practically identical were confirmed by a second experiment with another patient. It would therefore seem that given sufficient opsonin the white blood corpuscle is impartial in his selection of foes. All patients with chronic pulmonary tuberculosis with an arrested condition have been found to have low opsonic indices to the tubercle bacillus as well as to their secondary organisms. The condition of such a patient is best described by comparing him to a country mastered by the armed occupation of mixed hosts.

A FEW ILLUSTRATIVE CASES OF DIFFERENT TYPES OF MIXED INFECTIONS.

Miss B., age 26. Sent to Colorado Springs, November, 1906, for catarrhal phthisis. Infiltration and sticky râles at apices of both lungs, scarcely any cough, no expectoration, gradual gain in health till February, 1907, attack of influenza, followed by cough and purulent expectoration, with coarse râles at both apices.

Sputum.—No tubercle bacilli; pneumococci and staphylococci, the former found frequently in the pus cells. The sputum was planted out and pneumococcus and staphylococcus colonies grew, the former outnumbering the latter. Vaccines were made, as the patient showed, after several weeks, no ability to conquer her cough.

March 10. Inoculation of 20,000,000 of pneumococcus vaccine, sputum increased in amount for several days, followed by decreased amount.

March 16. Inoculation of 30,000,000 of pneumococcus vaccine, bronchial wheezing, which had been annoying patient, all disappeared following this dose; no expectoration for several days.

April 1. Râles at both apices now again of the sticky character; three more

inoculations were given with the addition of some staphyloccoccus vaccine and small doses of Koch's new tuberculin.

October, 1907. Patient still without cough or expectoration. Sticky râles persist at each apex. Opsonic index to tubercle persistently low; inoculation of Koch's new tuberculin started as climatic help has not produced a complete cure.

This case would seem to illustrate the theory of some that the influenza bacillus is necessary for the introduction of the pneumococcus.

Case 2.—May, 1907. Mr. G., age 40. Pulmonary tuberculosis five years; cavity in each lung. For some months past suffering from persistent fever following influenza, accompanied by excessive expectoration, sputum measured six ounces. Extensive sycosis (staphylococcus) of mustache and hair in nostrils, of several years chronicity.

Sputum Examination.—Tubercle bacilli, streptopneumococci and staphylococci present, some phagocytosis of all. Cultures were made and colonies of the latter, staphylococcus aureus by far predominated. Inoculation of a staphylococcus vaccine increased temporarily the amount of sputum, soon to be followed by a decrease to less than 2 ounces. The sycosis which was assisted by epilation (former epilation had failed to cure) rapidly disappeared, as also did the patient's fever. A gain in weight of over thirty pounds was made, and a bed-ridden patient was restored to comparatively good health.

Case 3.—January, 1907. Pulmonary tuberculosis, eight years. Cavity in left apex. Profuse expectoration for six years, amount of sputum daily four ounces.

Sputum Examination.—Tubercle bacilli, diplococci, staphylococci, some phagocytosis of all shown by examination of pus cells.

Culture of Sputum.—Few colonies of a pneumostreptococcus. Enormous numbers of staphylococcus aureus colonies. Vaccine made of latter. Following the first few inoculations the sputum was reduced to bare a half ounce, a clearing out of her cavity at night, necessitated by lying down, was completely stopped, and for the first time in eight years patient was able to lie down and sleep through the whole night undisturbed by coughing.

October, 1907. With the exception of an exacerbation lasting a few days this summer, the same improvement continues.

The impression has been gained that the "bronchorrhœa" type of cases has perhaps received less benefit connected with the reduction of sputum than the "cavernous" type, and a possible explanation may perhaps be found in the results of inoculations of staphylococcus vaccines for acne and boils. Owing to the difference in the access of blood to the skin surface and to the subcutaneous tissues the boils have been found much more amenable to increased opsonic lymph than the acne spots. A lasting immunity must not be expected from inoculations of these vaccines, just as a lasting and permanent immunity to the tubercle bacillus is unattainable by any tuberculin administration. After the apparent maximum results have been obtained, most patients have been kept in touch by inoculations at intervals of a few weeks.

In conclusion the author would put forth the earnest plea that these potent remedies be used early, while the machinery of immunization is yet unworn, that they be added to the tuberculin treatment, so well advocated by Trudeau and Wright, and then will the ranks of the advanced tuberculous be lessened.

The writer wishes to express his sincere thanks to Drs. G. W. Morse and W. W. Williams; and to Messrs. Hedblom, Lieb and Smillie of Colorado College for their painstaking laboratory work.

THE PRESENT STATUS OF THE TREATMENT OF TUBERCULOSIS IN ILLINOIS.*

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OTTAWA, ILL.

If I should confine myself strictly to the topic assigned me there would be but little to say. Since the treatment of tuberculosis comprehends more than the care of the individual patient, I take the liberty of enlarging somewhat upon my subject by giving a brief résumé of the work along tuberculosis lines thus far attempted and accomplished in this state.

Up to four years ago practically nothing had been done in this state either for the prevention or cure of tuberculosis. A few medical men had discussed the subject before medical societies, but no organized movement which had for its object the union of all the social forces had been attempted. In 1904 the Illinois State Medical Society took the first active steps toward the inauguration of a crusade against tuberculosis. As a part of the very comprehensive plan which was adopted, a symposium on tuberculosis was arranged covering in a general way every feature of the problem and in popular language. This symposium was presented by some of the ablest men in the medical profession. The cooperation of the press was invited, which was promptly responded to by the publication of the symposium, either in whole or in part. As a result the attention of the people of the state was simultaneously called to the necessity for action and an organized movement begun. A committee representing the state medical society was appointed with power to act. At their suggestion the State Society for the Prevention of Tuberculosis was organized. This organization included many representative men in and out of the profession. They succeeded in carrying on the work with considerable activity for a year or two, since which time for some unaccountable reason their labors have ceased. However, the work done by this organization was valuable and has led to the formation of other organizations which have and still are doing most excellent work. The Chicago Tuberculosis Institute has really taken over the work of the State Society for the Prevention of Tuberculosis and is probably in a better position to carry it on at present than an organization representing the whole state.

The educational forces which have been at work have largely been confined to the medical profession in the way of medical society work and popular lectures by medical men. Several local anti-tuberculosis societies have been organized and some of them are doing efficient work. The National Tuberculosis Exhibit was brought to this city soon after it was organized. The influence of that exhibit was very great and gave the movement in this state a decided impetus. The assistance of the press has been invaluable. The information published has emanated from medical sources and for the most part has been exceedingly reliable.

* Read before the Chicago Medical Society, Feb. 26, 1908.

The Chicago Tuberculosis Institute is the largest, most comprehensive and influential of any single organization in the state, and has charge of all the work in Chicago not under the official control of the city health department. The executive officer of this society is Mr. Alex. M. Wilson, who is a trained sociologist, a gentleman of great executive ability and who comes to the metropolis of the west fresh from victorious achievements in the city of Boston, where he brought order out of chaos and placed the work in that city on a better footing than any other in the United States. We expect him to accomplish much for Chicago, and fully expect his influence will not be confined to this city alone but extend throughout the state. He is already actively co-operating with all other organizations in the state. This society, in addition to its work of collecting statistics on the manifold phases of tuberculosis, has recently established six dispensaries which are well distributed throughout the city. This work is too recent to make it possible to give statistical information of much value.

The Visiting Nurses' Association of Chicago, under the direction of Miss Harriet Fulmer, was one of the first organizations to do practical work among the tuberculous poor. This was the only organization for many years in this city giving individual care to tuberculous cases. The work of this organization has been to locate tuberculous patients, render such assistance as possible in making them comfortable, and especially prevent the spread of infection. The real value of their work is in instructing and supervising patients in their homes. During the last year 1,148 cases received an average of three or four visits a week. Nine hundred of these were in the advanced stage and were a prolific source of infection which would have been at least 50 per cent. greater had they not been under the supervision of this organization. During the year they gave out 20,000 sputum cups and paper napkins, disinfected the bedding, clothing and premises and cleaned up each one of the 1,148 homes which they have visited and prevented infection in 5,000 others. The very thorough and systematic work of this splendid organization of splendid women, under the direction of Miss Fulmer, remarkable for her leadership, is a record which would be creditable to any organization with much larger resources. When we take into account the fact that these women undertook this work at a time when it seemed a hopeless undertaking our appreciation is increased. Two years ago last summer they established a tent colony at Glencoe, Ill., which was conducted for the summer months. As a result of this humble effort they succeeded in attracting sufficient attention to result in the establishment of the Edward Sanatorium at Naperville, which now has accommodations for about thirty patients and will soon be enlarged to 100. This splendid institution is a donation of Mrs. Keith Spaulding of this city.

The State Board of Health has also done excellent work. I quote from a letter received from Dr. J. A. Egan, secretary, which was written in response to my inquiry as to the work of the board. He says, referring to the circular on consumption published by that board: "We have distributed about 150,000 copies of this circular since 1904. We intend to

have published 100,000 copies of the present edition at once and distribute them as rapidly as possible. It is our intention first to send the circular to the students of the state university—some 4,000—and then to the 27,000 school teachers in the state. Then, of course, we will cover all the physicians of the state. The *Bulletin* is sent to about 6,000. As regards the laboratory, will say that we have stations for containers in 200 cities of the state. Up to within the past month we had 100 stations, but the number has been increased during the last thirty days. These stations are all supplied with containers for the transmission of specimens. During the past year the laboratory has examined 2,300 specimens in cases of suspected tuberculosis. It is our intention to distribute 100,000 copies of our recently revised circular as rapidly as possible. After covering the medical students, school teachers and physicians, we will probably avail ourselves of society and organization lists, and also the telephone directories, to distribute the other 40,000. We hope to get those circulars in the hands of persons having consumption, and to this end we intend to write to every one of the 10,000 physicians of the state, asking them to either place a copy of the circular in every family in which there may be a consumptive patient or to give the names of the families afflicted and permit us to distribute them."

Several of the state charitable institutions, notably the insane hospitals, have been doing most excellent work; especially the Illinois General Hospital for the Insane at Bartonville, and the Western Hospital for the Insane at Watertown. Dr. Zeller's letter is so clear and comprehensive that I take the liberty of quoting in full:

"I have the honor to acknowledge your recent request for information concerning the part played by this institution in the crusade against tuberculosis. I will say that the limited segregation of consumptives struck me from the outset as an inexcusable institutional omission. It had become the accepted practice that the consumptive be allowed to remain in his cottage from the incipiency to the fatal termination of the disease, or if removed to the hospital ward his isolation consisted of nothing more than a single room and such prophylaxis as was possible under these conditions. With the greater liberality in the treatment of the insane there came a realization that the outdoor treatment could apply to them in part, and in the summer of 1905 I enclosed a large porch of one of the cottages with canvas and placed 6 patients in it. This porch colony formed the nucleus of our present extensive tent colony. I attended the Chicago Tuberculosis Exhibit in 1905 and later was present at the formal dedication of the Ottawa Tent Colony and heard the able addresses of Drs. Billings, Moyer and others. I came home fully possessed with the idea that practically all of the measures advocated could be applied to the insane. My 6 patients spent the winter in their porch colony without incident. None died and there was no serious attempt to escape. All showed decided evidences of improvement. In the summer of 1906 I attached one large Humphrey and five La Pointe tents to the woman's hospital and 16 women spent the entire winter

there. At the same time I built a canvas annex to the mens' hospital and placed ten men in it, abandoning my porch colony. My experience was so satisfactory that early in 1907 I decided to combine all the tents into one colony, and we now have twenty-one tents, with dining-room, diet kitchen, nurses' office, two solaria, dressing and clothes room and sleeping tents for 48 patients—24 of each sex. I am now building an entirely new colony that will accommodate 56 men, and when completed will devote the other colony entirely to women. This will give me room for 104 consumptives, or 5 per cent. of our total population. This will be small enough when we consider that we have in our care 2,000 incurables who have spent from one to forty years in asylums or almshouses. Our experience has been a revelation. Not only have these people improved in mentality and habit by reason of their open-air life, but the disease has been arrested in most instances and about 25 per cent. have improved sufficiently to warrant their return to the cottages. Most of the patients originally placed in the colony are still alive. An appended table of weights may interest you. The colony is in charge of an assistant physician who has no other duties than the care of these 48 people and the consequent laboratory work. Every case is diagnosed microscopically and the opsonic index is followed where serum therapy is administered. A menu, based on actual caloric value, is prescribed and carefully adhered to and all patients are weighed once a week. A graduate dietist prepares all of the food consumed in the institution, and that sent to the tent colony consists of every approved article of diet for consumptives and is administered at frequent intervals. Seven nurses and attendants are in charge of the colony in relays of eight hours each. When volunteers were called for many more than were needed responded for duty on the colony and an assignment there is accepted as readily as on any ward of the institution. This institution cost more than $1,000,000 and consists of twenty-six brick and stone buildings, yet none attracts more favorable attention or is doing greater good than the plain group of inexpensive tents wherein our consumptives are being housed and treated."

Dr. W. E. Taylor, superintendent of Western Hospital for the Insane, in response to my request for information with regard to his work, says: "In reply to your favor of recent date regarding our tent colony, I will say that the open-air treatment for tubercular cases at this institution has given results far beyond my expectations. . . . Most of our cases, if treated in the early stages, are cured and a large per cent. of the more advanced ones are greatly benefited. . . . In this institution I find that even demented cases sleep better and recover faster if they sleep in a very cold room than they do if in a warm room, and during the past few years, except during the cold winter weather, we keep a large number of our patients in a camp, permitting them to sleep in tents, and the improvement in most cases has been marvelous. . . . We have approximately 20 women and 16 men suffering with tuberculosis. Those who can be trusted sleep in tents, and those who can not, sleep on a screened porch. I believe that insane as well as others affected

with tuberculosis should sleep in the open air both summer and winter, and for the past two years we have adhered strictly to that policy."

While none of the other state charitable institutions, so far as I know, have made special provision for the segregation of tuberculous cases, several are making active preparations to do so. The agitation growing out of the publicity as to the insanitary conditions at the Joliet penitentiary, which has led to the terrible mortality from tuberculosis in that institution, has attracted the attention of the state legislature sufficiently to lead to steps being taken for its removal to a more healthful location and the construction of a prison with a view to improving the sanitary condition of the prisoners.

The provisions thus far made for the actual treatment of tuberculous cases in this state are exceedingly meager. Aside from the tuberculosis hospital at Dunning, which under present conditions is simply a refuge for the dying patient, and St. Ann's Hospital conducted by the Sisters of Charity in this city, there is no provision for the thousands of poor in the city of Chicago. The accommodations at Naperville, which is a semi-charitable institution, are at present limited to thirty beds, but will soon be increased to 100. There are two private sanatoria in the state. The Buffalo Rock Sanatorium under homeopathic auspices. This institution is in process of building, but not yet ready for the reception of patients. The Ottawa Tent Colony has been in operation for three years and a half and has accommodations for sixty patients. This is the very meager accommodations for the 25,000 tuberculous invalids in the state.

It is hoped and expected that the law recently enacted providing for local sanatoria will lead to a more liberal provision for the helpless and those of small means. There is no longer any question as to the curability of tuberculosis under proper conditions and within reasonable limitations, and that climate is not an important factor. Results at the Edward Sanatorium and at the Ottawa Tent Colony have been just as satisfactory as the treatment of the same number of cases anywhere else, under like conditions as to the stage of the disease and the time under treatment. The large number of failures here and elsewhere are not due to climatic conditions but the failure to appreciate the time element in the treatment and the necessity for early diagnosis. These conditions are not local and are met by sanatorium workers, at least all over this country. Conditions are somewhat better in Europe, especially in Germany.

While this report apparently shows but little done, it must be borne in mind that the time necessary to organize a state having a population of 5,000,000 and including a large city like Chicago is much more difficult than in one having a less population and no large and unwieldy cities. We are behind sister states in the erection of state sanatoria. I am not quite sure, however, but that the delay is advantageous. It is a serious question whether or not it is advisable for the state to assume this responsibility. The unit of representation should be less, and for this reason as well as some others I believe the Glackin law providing

for local sanatoria will come nearer proving a solution of what under any circumstances is a very complex and burdensome proposition.

Then, too, we are just passing from an era of massive and unnecessarily expensive buildings to a more simple, rational and inexpensive method of housing this class of invalids. Even if the state should decide in the future to build sanatoria it is reasonable to suppose that in the light of subsequent events a given sum of money will be made to accomplish more than if we had secured an appropriation when attempted two and four years ago. The principles of the modern treatment of tuberculosis are very definitely settled. As to methods of application, we are in rather a chaotic state and our views are rapidly changing. This, too, for the better; therefore, it will be wise for us to make haste slowly.

In conclusion permit me to say that there is nothing discouraging in the situation in this state. On the contrary, much cause for congratulation. What is being done is well done. We may seem to lack the enthusiasm which characterizes the work in some other states. We must keep in mind, however, that enthusiasm is not efficiency. We need wise guidance quite as much as stimulation. We can confidently count upon the necessary enthusiasm to carry on our work when our plans are sufficiently perfected to appeal to the business and professional sense of our people. The activity which is being shown in the co-operation of societies, the intelligent interest of the great army of organized labor, the awakening sense of responsibility in employers, which is now manifesting itself, are all pledges of the ultimate success of the present crusade against the "great white plague." The International Tuberculosis Congress which will be held next fall in Washington will be the greatest health congress ever held. This state is already taking active steps to be properly represented and to assist in making that great congress a success. My prediction is that the influence of that great body of intelligent workers, representing every civilized country on the globe, will stimulate a wave of enthusiasm and well directed energy such as never has been witnessed in the history of the world.

In this anti-tuberculosis movement the medical profession has as never before discovered its true relations to the public. It has made medical evangelists out of a large and increasingly larger number of doctors. We are really doctors—teachers—as well as physicians. Hundreds of public lectures are being delivered by medical men who three or four years ago would have even doubted the propriety of addressing a lay audience on a medical topic. This work has been exceedingly profitable to the public, and more profitable to the profession, for the reason that it has broken down our traditional reserve and brought into play new energies which will be brought to bear not alone on tuberculosis but on the larger question of public health in general. While the tuberculosis problem is social rather than medical, doctors must lead and largely direct the movement. In doing this we are not only enlarging the field of our usefulness but are drawing the people to us in a way that will ultimately accrue to our material and professional advantage.

The results of the work of the past four years in Illinois are, all things considered, highly creditable to our profession, and every one of the many physicians who have assisted deserves the approval of his state, his profession and of his own heart.

GENERAL ASPECTS OF PSYCHOTHERAPY.*

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CHICAGO.

Long before modern medicine was born, psychotherapy had already accomplished wonders. When scientific medicine did arrive, mental therapy had to change its garb and was even ostracised for a time. Today it is firmly established upon a solid foundation, and in my opinion not until human beings cease to have minds will mental treatment be displaced from its well-earned position.

Every physician, be he a country practitioner or a fashionable city doctor, practices mental medicine, and this regardless of whether he prescribes high dilutions, nasty mixtures, hydrotherapy, massage, electricity, or only gives his patient a ten-minute chat at $1.00 per minute. The stronger the physician himself is convinced of the efficacy of his treatment, the more effective as a rule are his remedies. Often it is not medicine that the patient needs, but rather a good dose of "doctor," as one of my friends expressed it. In short, the physician's personality may count for more than his prescription. This fact seems to be well known even to the medical student who in the latter part of his course begins to prepare himself for practice by raising a crop of hair on his chin. After he has left the medical school you may find him, if he is sensible, with full beard, silk hat, long coat, a professional smile and smooth vocabulary, sitting in a well-equipped office containing more instruments and electrical appliances than he can possibly use in the coming ten or more years of his practice. If perchance he thinks you are a patient, he will admit you with a most self-possessed and confidence-inspiring manner, which seems to say: "I am ready for any emergency, from a toothache to a gastroenterostomy; have no fear to entrust yourself to me, sir!" Why does this country-bred boy so change his dress, manner and even his speech? Because he wishes to make a mental impression on his patient, or, for short, he practices psychotherapy. And though the practice is as old as the world, the theory of it, that is, the conscious recognition of its phenomena, conditions, causes, prevalence and importance in medical practice is comparatively new.

Some men are born psychotherapeutists and consequently there is no need for such to learn the art. Their mere entrance into the sick-room brings light, life and hope. Emerson probably had an individual of this type in view when he wrote: "It costs a beautiful person no exertion to

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paint her image on our eyes, yet how splendid is that benefit! It costs no more for a wise soul to convey his quality to other men. And everyone can do his best thing easiest. He is great who is what he is from nature and who never reminds us of others. But he must be related to us, and our life receive from him some promise or explanation. I can not tell what I would know, but I have observed there are persons who, in their character and actions, answer questions which I have not skill to put."

While but few are fortunate to inherit a great personality, many can acquire the outward signs and characteristics of greatness. The theme of conscious and well-directed psychotherapy in its present aspect has already been before the profession many years, yet we have allowed quacks and healers to grasp the essentials and to apply them in practice, while we supinely revenge ourselves by calling them "humbugs." That there are still those among us who persistently refuse recognition to mental methods in treatment is a sad commentary upon the human understanding. Nothing would seem more self-evident than that psychotherapy is part of general therapy and belongs exclusively to the domain of the legitimate practitioner, and yet we have in our ranks men who have sunk to the level of "apologists" and lackeys of "religious" healers. Evidently it is easier—but in my opinion far less dignified—to send a patient to a clergyman for treatment than to master the principles of psychotherapy and how to apply them. These men not only lay bare their own weakness, but they mistake personal incompetence for that of the entire profession, by ignoring the fact that there are many physicians who practice mental in conjunction with other forms of therapy.

What is psychotherapy? In a general way it signifies the use of any means whatever for the purpose of so affecting a patient's mentality as to produce amelioration or removal of symptoms. The effects are never produced by chemical or mechanical agents, although the latter may serve as convenient vehicles. One great distinction between psychic and drug treatment is that the latter often exerts its effects upon metabolism without the patient's co-operation and sometimes even against his will or expectations; the former always presupposes the patient's active or passive participation in altering his mode of thought in the direction of cure.

There are two principal methods by which patients are psychically influenced for purposes of treatment:

1. By calling into service more or less mysterious agencies, that is, by altering the patient's consciousness and making him an obedient tool of the physician's will.

2. Subsequent to a correct analysis of the symptoms the physician endeavors by methodic instruction and persuasion to strengthen the patient's will and his powers of resistance in order to enable him to direct his thoughts into healthy channels, thereby producing beneficial results.

The first-mentioned method, until recently the more popular and better known, is the so-called treatment by suggestion. The Century Dictionary defines suggestion thus: "The insinuation of a belief or impulse into the mind of a subject by any means, as by words or gestures, usually by emphatic declaration." Not every influence exerted by one

man upon another is suggestion, but only when an individual accepts an idea without adequate physiological excitation which he then transforms into an act, idea or sensation.

According to Forel, "suggestion is the production of a dynamic change in the nervous system of an individual by arousing in his mind the idea that such change is either taking place, has already occurred or is about to be realized. Verbal suggestion is the process by which ideas are implanted into the mind through words. Suggestibility is that quality of mind which enables one to accept suggestions. It is generally understood that most people are suggestible: some can be influenced in the waking state and others must be placed into the state of passivity called hypnotism before they can accept suggestions. Hypnotism itself is considered suggestion carried to the extreme. It is beyond the scope of this paper to discuss the technic and practical application of hypnotism. Many excellent books have been written on the subject and the practice can be easily acquired by any one who wishes. Besides, psychotherapeutists have of late learned to rely almost exclusively upon suggestion and persuasion in the waking state, and consequently hypnotism is being gradually relegated into the background. In speaking of suggestion it must be stated that an individual may consciously or unconsciously produce suggestions within himself without the aid of another person, in which case he is the subject of autosuggestions. There are beneficial and harmful suggestions and autosuggestions. Suggestions influence a person's acts intuitively, blindly, not by arguments. Indeed reason normally offers an effective barrier against unhealthy suggestions, which latter may not inaptly be compared to toxins generated either within (autosuggestions) or without the body (heterosuggestions), while reason itself is built on the basis of firmly organized brain automatons and may be compared either to phagocytes or body-protectors. Proper counter-suggestions may be likened to antitoxins or vaccines which, when introduced into the mind, neutralize the effects of unhealthy suggestions, gradually permitting reason to again assume full control.

Suggestive treatment is administered in several ways: Of the physician's personality I have already spoken. But more than this, his statements to the patient must tend to assuage fear and ought never to admit of doubtful interpretation. Every word is to convey to the patient a hope or promise of cure. If medicines are prescribed they must not be given to the patient as one would give them to a horse, but positive assurance or relief should always accompany them. Not all individuals will need the same amount of medicine, nor will all need the same quantity of suggestion. "One must learn to distinguish those who need an ounce of medicine and a grain of wisdom from those who require an ounce of wisdom and a grain of medicine," as Schofield so aptly puts it. Dr. Weir Mitchell correctly points out that "the doctor who gives much medicine and many medicines, who is continually changing them, and who does not insist with care on knowing all about the patient's habits as to

diet, meal times, sleep, modes of work, and hours of recreation, is, on the whole, one to be avoided." One rule in mental therapeutics never to be forgotten is that the cure of the sick body or exhausted nerves must precede the cure of the sick mind; in other words, the physical must precede the psychical.

After having thoroughly penetrated the patient's mental machinery one will not be at a loss for proper suggestions. Furthermore, it is as difficult to give special rules for mental therapy as it is to mention specifics for physical disease. Although we are still without a mental opsonic index we can learn, with a little effort, to supplant unhealthy with healthy ideas.

I have now reached the second and, in my opinion, the most important part of our subject, namely, *psychotherapy by educational means.* This method consists in giving the patient a logical and truthful explanation of his symptoms and how they originated; it teaches him to adopt such measures as will strengthen his will. It is needless to state that children and those who have the minds of children are not subjects for such treatment. Appeals to reason, explanations of right living and thinking are the principal weapons used. One successful effort is utilized as a stimulus to still greater efforts. The patient is spurred on to do his best, not by force from without, but by the exercise of powers from within; in other words, he is induced to act as a free being and not as a puppet in the hands of an operator. This is truly educational treatment, for according to Emerson: "Man is endogenous and education is unfolding. The aid we have from others is mechanical, compared with the discoveries of nature in us. What is thus learned is delightful in the doing, and the effect remains. Right ethics are central and go from within outwards. Gift is contrary to the law of the universe." Attention and interest must be aroused in the patient, just as in the student, not by constant admonition to be good, but by primarily furnishing examples for imitation. If he lives in a faulty environment, this must be changed, or all effort will be in vain. Good companions, preferably of the same age as the patient, will exert a greater influence on him than all the preaching in the world. Let us again quote the New England sage, who says: "We are all wise in capacity, though so few in energy. There needs but one wise man in a company, and all are wise, so rapid is contagion. Even normally we can not escape our environments, our class, our city. There are vices and follies incident to whole populations and ages. Men resemble their contemporaries even more than their progenitors. It is observed in old couples, or in persons who have been housemates for a course of years, that they grow alike, and if they should live long enough we should not be able to know them apart." It is within the knowledge of all that the contact of nervous patients with each other has a tendency to multiply symptoms in them. The worst company for a nervous daughter is her neurotic mother. Perhaps the greatest benefit from the Weir Mitchell rest cure, which enforces isolation from friends and relatives and compels association with a strange,

sensible nurse, is through the necessary change of environment. There are many ways of changing environment besides sending to a sanitarium.

Next to the careful selection of proper associates comes a wise choice of your patient's daily reading. Only books and magazines that are stimulating, refreshing and overflowing with optimism should be recommended to the patient, while all yellow journals, the chroniclers of crime and monstrosity, should be banished from his sight. No less important is the inculcation of the idea of methodic work suitable to the individual's temperament. Work is the most powerful weapon we have against the habit of introspection, which latter is usually the result of indolence. Many a woman who for months has not raised a finger in her household suddenly discovers that she can do without help after the physician has explained to her that regular exercise strengthens the organism. We have ceased to send every nervous woman to bed, ostensibly to take the rest cure, but really to fill her mind with all sort of phobias. Instead we order the so-called work cure. And not only do we aim to occupy their bodies, but we also plan to arouse their slumbering intellects. We appeal to their moral sense and arouse their interest in charity and settlement work. "Serving others is serving us," is a good text for preachment. I once heard a liberal clergyman in this city say to the women of his church, "When you do charity you receive infinitely more than you give." This statement strikes me as especially applicable to the indolent neurotic, whose empty life is often through charitable work converted into one of absorbing activities. These are only a few of the things in which patients can become interested. There are many others that will readily suggest themselves to the thinking physician.

Now some of my friends will contend that the methods as outlined may very properly be advised, but will the patient agree to follow them? My answer is that the educational methods of psychic treatment do not differ radically from other educational lines, in which we have to resort to the various motives governing human actions; among these are rewards, threats, punishment, even flattery.

Reward may take the form of granting a patient's request, provided he complies with your conditions. The hope of reward exercises an immense influence not only upon children, but also upon adults.

Threats are occasionally necessary. The patient is merely warned that certain privileges will be curtailed if your directions are not followed.

Punishment may become necessary, but it should never appear in the form of revenge, otherwise resentment will follow. I imagine that the old-time treatment of hysteria by asafetida and valerianates was a kind of punishment; and it must be admitted that it often did abbreviate hysterical attacks. But there are better methods than the administration of malodorous medicines. For instance, a sensitive patient who has always received courteous treatment from her physician will be set to thinking when he administers a rebuke by a short, gruff greeting or by studied indifference.

In still other cases a joke or a bit of flattery will arouse a patient's latent energies. Tell a certain indolent person who is averse to taking the prescribed walk: "In my opinion you belong to the active, energetic type; walking will be mere child's play for you!" and he will run, not walk. We must always inspire our patients with hope of recovery; sometimes it is well to relate similar cases in which we accomplished cures. At no time should we drop any hint which the patient may interpret as an unfavorable prognosis, nor should we pay undue attention to his local complaints which we know to be only subjective. Occasionally a remark made to a tattling nurse or friend will produce results when a direct statement to the patient may fall on barren soil.

Seeing how necessary it is for the physician to study the various paths to his patient's mind and the most advantageous points of attack, I can not comprehend how Dr. Cabot, of Boston, can censure frequent contact of physician and patient. We will again let his distinguished townsman, Emerson, answer him: "Talk much with any man of vigorous mind, and we acquire very fast the habit of looking at things in the same light, and on each occurrence we anticipate his thought." Personally I think repeated conversations with sane doctors, that is, with those who do not learn their psychotherapy from Christian Scientists, Christian Psychologists or other healers, can do no harm to patients and must do them a great deal of good. Contrary to Dr. Cabot, I believe in the doctor habit and am unalterably opposed to the prayer habit.

In what diseases will psychotherapy do good? In all or nearly all. In functional nervous diseases it will do most good. Even in organic disease, symptoms may be relieved and can even be made to disappear by properly directed psychic treatment.

As this paper deals only with the general aspects of this large subject, details can not be entered into and the citation of illustrative case histories must be reserved for another occasion.

SUMMARY AND CONCLUSION.

1. There are two methods in psychotherapy, (a) suggestion, (b) education and persuasion.

2. Hypnotism, a form of suggestion, should be employed as a last resort, but it has its legitimate uses.

3. Psychotherapy is a part of general medicine and surgery; consequently it should be utilized by physicians and not left to quacks and healers.

4. A most painstaking physical and mental examination is a necessary prerequisite to successful psychic treatment, as the patient must often be treated both physically and psychically.

5. Psychotherapy should be incorporated in the regular curriculum of every medical school, because the best interests of the public and the profession demand that this powerful weapon for good, if properly used, shall be placed early into the hands of sane and safe men.

100 State Street.

EXPERIMENTAL STUDIES ON ROUND ULCER OF THE STOMACH AND DUODENUM.*

FENTON B. TURCK, M.D.

CHICAGO.

The present communication on the etiology of peptic ulcer presents new phases by the author's more recent experimental researches on animals. By feeding animals, principally dogs, with a certain strain of bouillon cultures of *Bacillus coli communis* for several months, spontaneous or induced genuine peptic stomach or duodenal ulcer was found in every animal experimented upon, the ulcer causing death by perforation or by hemorrhages. Certain changes in the blood serum and also cellular changes indicated a general process, characterized by diminution of the normal protective bodies resulting in autocytolysis. The blood changes and general condition seemed to be produced by the absorption of products formed in the gastrointestinal tract. Histological examinations of the induced peptic ulcers showed no round-cell infiltration or other evidences of healing processes.

Intravenous inoculations of dogs and rabbits with cultures of *Bacillus coli communis* for a long period of time (one to six months) failed to produce ulcer of the stomach.[1] It was found that artificial ulcers made by removing portions of the mucous membranes of the stomach did not heal in four cases out of the twenty animals that received the above inoculations. Genuine induced peptic ulcers were produced, however, in every experiment in which bouillon cultures of *Bacillus coli communis* were fed to dogs. Bouillon cultures of this organism were given daily in increasing amounts from 50 cubic centimeters to ordinary meat diet and in other cases with meat extractives in addition to the bouillon cultures. During the course of experiments observations were made of the blood changes, such as the agglutinating, hemolytic and coagulating power; of the bacteria in the blood and stomach; of the systemic disturbances; of the evidences of infection; of the symptoms of ulcer, as pain, hemorrhage, etc. It was found that the dog's serum agglutinated bacillus coli in high dilution, that the coagulating time of the blood was slower, that hemolysis was present, that bacteria were at no time found in the blood, and that few, if any, symptoms of systemic disturbance appeared.

The experiments were begun with the colon bacillus because this is the organism found normally in large number in the intestines, and which multiplies luxuriantly in certain disorders of the stomach and intestines. Cultures of the bacilli were used made with bouillon of meat extractives, first by injection directly into the circulation, but later they were fed to the animals with their ordinary meat diet. In some cases the meat extractives fed were double in amount of the meat they ate. The bacilli used for the cultures were taken from feces of patients suffering with ulcer of the stomach. So much for the earliest experi-

*Read before Chicago Medical Society, March 4, 1908. For discussion see page —.

1. Bull. No. 32, Hyg. Lab., etc., Washington.

ments of others and myself which led on to the adoption of the method of feeding bouillon cultures of colon bacillus, which invariably has given positive results.

METHOD.[2]

Increasing quantities of a twenty-four or forty-eight hour growth of *Bacillus coli communis* in bouillon were fed daily to the dogs, together with an ordinary meat diet, beginning with small amounts and increasing to 1,000 cubic centimeters. Watery emulsions of the surface growth on agar plates were occasionally substituted. The strain of *Bacillus coli communis* used was obtained from the feces of cases of ulcer of the stomach. Where watery emulsions of the surface growth on agar plates were substituted, beef extract in addition was fed the dogs in saturated watery solution or in capsules, approximately 25 grams being fed daily, together with an ordinary meat diet.

The results of the feeding process described above may be reduced to four phases or stages:

1. Typical gastric ulcer, which, if allowed to proceed, would result in the usual fatal perforation or hemorrhage. The absence of round-cell infiltration, or any apparent indication of healing.

2. The second phase is the result of the cessation of the feeding process, and is in truth an interruption of the ulceration. It is a stage of healing, leaving after it a distinctly observable cicatrix. In a word, it is a healing of the ulcer by the withdrawal of its causes.[3] Some chemotactic substances seemed to be formed in this second stage of the experiments, not active in the ulcer area, as noted above in the first phase of these experiments.

3. The third stage ensues by resumption of the feeding process with the bouillon cultures in very large quantities. The experiments were as follows: First, feeding for two months, gradually increasing; second, stopping the feeding for two months; third, resumption of maximum feeding 1,000 cubic centimeters bouillon *Bacillus coli communis*. The results were violent reactions; two cases of psychosis followed by death, two of diarrhea and bloody flux followed by death. These sudden violent reactions following the resumption of the feeding of *Bacillus coli communis* would indicate that increased susceptibility was produced during the period when the feeding was suspended.

It is observable that on injecting large doses of a toxin or of a foreign body, such as horse serum, into a guinea-pig, the phenomenon of anaphylaxis ensues.[4] When the injection is temporarily suspended and resumed, violent reaction of the organisms follows.

4. This stage also was preceded by one to three months of feeding and two months of interruption of feeding. The resumption of feeding, however, of *Bacillus coli communis* was in small quantities and at intervals. The chemotactic conditions of the second stage were gradually developed; at the same time anaphylaxis was not induced, and the result is chronic deep ulcer.

2. Journ. Med. Research, vol. xvii, No. 4.
3. British Med. Journ., April 20, 1907.
4. Archiv. di fisiol., 1904, cxxix. Also Compt. rend. Soc. biol., 1905, clx, 112, 955.

The question arises, is there a relation between these induced ulcers in animals and the peptic or round ulcer in the human being? Hektoen has noted many points of resemblance. So far as the histological examinations of these ulcers are concerned, there is a very close similarity to the peptic ulcer in a human being, but as to the question of the etiological factors being the same, it is somewhat more difficult to establish, but recently Mahnert observed that fifty cases of ulcer of the stomach developed after an attack of appendicitis. Appendicitis is the direct result of disturbances due to the intestinal flora and more frequently to the colon bacillus, and the finding of ulcer in the stomach in so many cases of appendicitis somewhat parallels these experiments from an etiological point of view.

TREATMENT.

Assuming, now, that we have a clearly defined case of ulcer to deal with, what are the indications for treatment? Primarily our experiments and clinical observations indicate that the lesion is the result of a general and not a wholly local cause; that it is induced by alterations in the pabulum of the intestinal flora and by absorption into the circulation of substances that lessen the normal protective power of the blood, lowering the resistance of a gastric or duodenal mucous membrane.

Conditions that render the gastric or duodenal mucosa peculiarly vulnerable—malnutrition, defective metabolism, visceral atony and a long train of predisposing elements—though not of themselves able to induce, may favor the production of ulcer. We must, therefore, address our efforts toward the improvement of these constitutional conditions, and perhaps the steps of treatment may be divided into four, namely, (1) proper nutrition for the entire system, (2) the establishment of an increase in the production of normal antibodies, (3) the re-establishment of functional activity or tone in the diseased organ, so that its power of resistance may be increased, (4) the employment of measures to inhibit the multiplication and change the character of the offending intestinal flora. Food that is digested in the upper tract, leaving no substance available for bacteria in the lower intestinal tract, would be the first indication of treatment, supplying such a preparation that would be least irritating to the stomach with the highest degree of absorption.[6]

VACCINE AND SERUM TREATMENT.

The use of the intestinal flora for the preparation of vaccines promises much for these cases. The preparation of sera will require much more experimental work before we can accomplish satisfactory clinical results. So far the most practical results have been obtained by the injection of the dead bacillus to excite the opsonins in the blood, in order to increase the resistance against autolysis. Diphtheria antitoxin seems to exert a polyvalent effect that is difficult to explain.

From the cases of the dogs in the last experiments, where the ulcer-

6. Medical Record, May 25, 1907.

inducing diet of colon bacilli was stopped after certain periods of time, and treatment for ulcer was instituted, and where postmortem revealed ulcers in various stages of healing much has been learned of importance in the prognosis of the disease in the human family, especially from the standpoint of general systemic conditions.

THE ANALYSIS AND MODIFICATION OF MOTHERS' MILK.*

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PEORIA, ILL.

Normal mothers' milk is an emulsion of fat globules floating in plasma. Its white color is due to refraction of light, as in other emulsions of oily nature. Milk is a perfect emulsion in that each globule remains separate with a thin layer of plasma adhering to it by the power of capillary attraction. This thin layer of plasma was taken by early examiners to be a capsule of albuminous material. Among the globules of fat float the smaller particles of proteids and held in solution are the lactose and earthy salts. Cotton of Chicago gives the average of mothers' milk as follows:

Proteids	1.2 per cent.
Fat	3.4 per cent.
Lactose	6.7 per cent.
Salts (ash)	0.2 per cent.
Water	88.5 per cent.

Average specific gravity 1.030, reaction alkaline. These percentages vary in different periods of lactation, but so slight as not to affect a clinical analysis, but may be summarized as follows:

1. Fat shows no constant change, its only characteristic is its variability.
2. Carbohydrates low on second day, rise rapidly during first ten days, increase continuously during lactation but very slowly after first ten days.
3. Proteids are reverse of carbohydrates.
4. Earthy salts diminish similar to proteids.
5. Colostrum period of ten days, has low carbohydrates with rapid increase, high proteids and salts with rapid decrease.

The methods of analyzing mothers' milk are numerous. Those that are made on accurate chemical bases are mostly done after the methods of Adams, Babcock or Leffman and Beam. These are chemical tests and, although accurate, involve so much time and apparatus as to make them impractical for clinical purposes. Therefore, they are of little interest to the clinician, so they will be omitted from this paper.

The clinical tests, or methods of analysis, of value are four:

1. The gravity test employed by Holt.
2. Optical test of Feser.
3. Action of reagents as used by Marcaud.

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* Read before the Peoria City Medical Society.

4. The combination action of reagents and the centrifuge as used by Babcock and Leffman and Beam.

Holt's apparatus is a slender cylinder graduated to 100 divisions. This cylinder is filled with milk to the zero mark and allowed to stand for twenty-four hours, when the percentage of cream can be read off. He assumes that fat is to cream as three is to five. This method, while simple, has two disadvantages. First, it requires so much time; second, the assumption that fat is to cream as three is to five is not always true, as other tests show fat does not have a definite ratio of cream. Baumhauser of Amsterdam analyzed chemically twenty samples of milk, which were numbered from 1 to 20; Nos. 5, 10, 15, 18 and 20 were found to contain fat 3.3 per cent., 3 per cent., 3.9 per cent., 2.3 per cent. and 2.7 per cent. respectively, although the depth of the layer of cream was the same in all these five samples.

Feser's lactoscope is a slender glass cylinder resting on a foot or base. Projecting up from the base into the center of the cylinder is a white porcelain column marked with black cross-lines. Four cubic centimeters of milk are put into the cylinder. This is diluted with distilled water, with frequent shakings to thoroughly mix the milk and water until a degree of dilution is reached enabling one to see the black cross-lines on the white column. The cylinder is so graduated that the percentage of fat may be read off from the amount of water required to make the proper dilution. This being an optical test, the "personal equation" comes into the problem as in all color tests. Then the different sizes of fat globules change the refraction of light, there being a great difference in the size of fat globules in two given samples of milk, although the percentage of fat may be the same. The more globules you have the more there are to refract the light, so that a sample with small fat globules would look denser than the one with large globules. These disadvantages make this test unreliable.

Marcaud's apparatus is a common graduated glass tube. The test is made by putting in five cubic centimeters of milk, adding one drop of caustic soda, then five cubic centimeters of ether, shaking tube until fat is extracted, and adding absolute alcohol and warming; the fat rises to the top and may be read off on graduation. This test has not given the uniform results obtained by combination of reagents and centrifuges.

Babcock and Leffman and Beam combined the reagents and centrifuges, although each use different reagents and different forms and sizes of bottles. The Babcock bottle has a long, slim, graduated neck with a bulb-shaped body, and is made to fit a cup or arm of Babcock's centrifuge. There are then put 17.6 cubic centimeters of milk into the bottle with a long slim pipet, taking a little care not to smear neck of the bottle. Then add 17.6 cubic centimeters of strong sulphuric acid, which changes the proteids into soluble acid albumin, thereby lessening the interference of the rising of the fat globules. The acid should be added slowly and mixed with the milk by a rotary motion so as not to agitate them too much. The bottle is then placed in the centrifuge and

rotated at 1,000 per minute for two minutes. Then fill the bottle well up in the graduated neck with boiling water, centrifuge again for one minute, when the percentage of butter fat may be read off. It is convenient to use a pair of compasses or dividers to take the depth of strata of fat, then placing one leg at zero the other will indicate the exact percentage of fat and save the subtraction necessary if fat is read just where it stands.

The Leffman and Beam bottles differ from the Babcock in that they fit many of the regular office centrifuges. They also have the advantage of taking less of the milk. A large sample is often hard to get, but otherwise the principle is the same. Fifteen cubic centimeters of milk are put into the bottle, three cubic centimeters of equal parts of amyl alcohol and strong hydrochloric acid added. The bottle is now filled to the shoulder with strong sulphuric acid mixed well with a rotary motion. The neck is then filled well up on to the graduation with equal parts of sulphuric acid and water, placed in centrifuge and rotated two minutes at 1,000 per minute, when percentage of fat may be read off. The Babcock method, owing to its simplicity and accuracy, is rapidly displacing all others. Richmond, by varying his results obtained by Babcock's method (with a great many analyses chemically done), showed that the Babcock method if carefully done would not vary over three-tenths of 1 per cent.

In all clinical tests the specific gravity is very important, for the relations of fat to specific gravity give us the data to calculate the total solids. The specific gravity should be taken with milk at a temperature of 60 degrees F. If taken above or below it should be increased one for every 10 degrees above 60 degrees and decreased one for every 10 degrees below 60 degrees, and with same proportion for smaller increase or decrease. In taking specific gravity allowance should be made for mucus, and it should be borne in mind that milk, owing to its viscidity, retains minute air bubbles and it should not be agitated before taking the specific gravity. The effect on the specific gravity in changing any of the constituents of milk is quite remarkable. For example, increase fat and you decrease specific gravity; while specific gravity is increased by increasing other solids. On the other hand, diminish fat and you increase specific gravity, while diminishing other solids diminishes specific gravity. So your dairyman may increase specific gravity by skimming the milk and reduce it back to normal by adding water. So it was found many years ago that the specific gravity test which was used at one time by health boards was not making the milkman be good.

In given samples, fat being high and specific gravity being normal, the total solids must be high. In other words, the higher the fat the higher the total solids must be in order to maintain normal specific gravity of 1.030. Since the sugar and salts maintain a constant percentage, the proteids are the next in importance after fat. Richmond, after a great many chemical analyses of milk, has given us two valuable deductions: first that sugar and salts are almost constant at sugar 6.7 per

cent. and salts at 0.2 per cent.; second, what is known as Richmond's formula for finding total solids after fat and specific gravity are known, which is 1/4 of last two figures of specific gravity plus 6/5 of fat plus the arbitary decimal .14. It may be thus stated in an algebraic formula, letting T. S. = total solids, G = last two figures of specific gravity and F = fat (from Cotton).

$$\text{T. S.} = \frac{\text{G}}{4} + \frac{6\,\text{F}}{5} + .14$$

In a given sample suppose specific gravity to be 1.028 and fat 4; then

$$\text{T. S.} = \frac{\text{G}}{4} + \frac{6\,\text{F}}{5} + .14$$

$$\text{T. S.} = \frac{28}{4} + \frac{24}{5} + .14$$

$$\text{T. S.} = 7 + 4.8 + .14$$

$$\text{T. S.} = 11.94$$

Then proteids are found by the following:

$$-\,\text{P} = \text{T. S.} - (6.7 + 0.2 + .14)$$

Proteids	= 1.04	Salts	= 0.2
Fat	= 4.	Water	= 88.06
Sugar	= 6.7		

MODIFICATION.

When the baby is sick the laity and a great many physicians see only a sick baby to be treated and do not realize why the baby is sick, so the baby is given a lot of remedies that are supposed to be "cure-alls" for bowels, indigestion and cholera infantum. All the while the fault is with the mother. How often could the suffering of these little ones be lessened if that could be understood, and especially by the mothers themselves. Milk to many people is just milk, and they are satisfied if they can (in obtaining their daily supply) be reasonably sure that it has not been skimmed. So if the mother has plenty of milk and the baby does not do well the conclusion is reached at once that the mother's milk does not agree with the baby without any consideration for the quality of the milk. I wonder how many times this has been said by physicians; often they are right and likely in some cases it never could be corrected, but in many it could, and every case should have a trial before the baby is put on cow's milk or any other substitute for mother's milk. No one would think of saying a patient had diabetes without first analyzing the urine. Then why should any mother be told that her milk does not agree with her baby without an analysis. Then, too, if it does not agree with the baby there is so much that can be done to make it agree. True, there are cases that are so grossly wrong that all efforts fail to bring it within the limits of safe food for a baby, as in a case of a physician's wife I knew in Chicago. The fat was 9 per cent. and the most rigid diet would

only bring it down to 6½ per cent. But so many are not so far off and can be corrected by changing the quality of the mother's food and superintending her exercise and habits of life.

The first thing that would suggest itself in a logical study of a sick baby would be, what makes it sick? If it is the mother's milk, what is wrong with it? Here is where the analysis comes in, and if it is found the sample is not a good one, you will know in what ingredient it is deficient or the reverse. Then one can go about it in a scientific way to correct the fault. This will be no easy task, for there are so many phases to the problem. Any violent agitation of the nervous system of the mother will change the quality and often the quantity of the milk, such as undue fatigue, excitement, anger, grief; also excessive coition, menstruation and conception, all of which should be held in mind in searching for a cause of a faulty sample. Then there are the many bad results which may have followed childbirth, such as laceration of the cervix or perineum, infected tubes or endometrium, malposition of the uterus and the many other ailments that the female generative organs are liable as a result of confinement. In other words, given a sick baby and mother with insufficient or faulty samples of milk the physician is in duty bound to give the mother a rigid examination, and any physical defect should be corrected if possible, even if that would necessitate artificial feeding temporarily and keeping up the supply of breast milk by a pump.

Of course all cases of indigestion in infants can not be charged to faulty milk, for good milk will make a baby sick if too much is taken, just as good food will make a grown person sick if he takes too much, and over-feeding is likely the rule rather than the exception in babies. Heubner has determined along the lines of metabolism the number of calories needed per day per kilogram of body weight necessary to insure proper development in normal breast-fed babies. This so-called energy quotient he found to be about 100 calories per kilogram of body weight from the third week to the end of the sixth month. A gradual diminishing amount after that time to about eighty or eighty-five at the end of the first year. He established seventy as the approximate quotient necessary to maintain a weight equilibrium. It is a simple matter, then, to calculate the amount of food a child needs. As there are two and one-fifth pounds to a kilogram, we have $100 \div 2\,1/5 = 45$, or the energy quotient per day per pound of body weight. So a fifteen-pound baby should have 675 quotients per day.

The physiological food value of the three principal foods are fat 9.3 calories per gram, carbohydrates 4.1, proteids 4.1. In calculating the energy quotient it is convenient to use the liter, as there are 1,000 grams in the liter. So 1,000 times your percentage gives the number of grams in the liter. Take, for example, the normal mother's milk with fat 3, proteids 1.5 and sugar 6.5 would give thirteen grams of fat, fifteen grams proteids and sixty-five grams of sugar. The fat multiplied by 9.3, proteids and sugar by 4.1 each. The sum of this would give the energy quotient for a liter or quart (as a liter represents about a quart near

enough for these calculations). So the energy quotient of a quart of this milk would be 598.9. A fifteen-pound baby would require a little over one quart of 3 per cent. and a little less than one quart of 4 per cent. milk. Taking this as a basis, nearly all babies are overfed.

But to get back to the mother; after one has assured himself that she is in good physical condition, then diet, exercise and superintending habits of life are left. When one expects to change any secretion of the body, by diet or otherwise, the physiology of that secretion becomes important. The knowledge of the mode of production of milk from the circulating fluids of the body is very indefinite. There are three theories:

1. That the emulsion of fat is produced by a breaking down of the living cells of the alveoli (a fatty degeneration, if you please), but this would necessitate the renewal of the epithelial cells, it is estimated, at least five times in twenty-four hours, which would seem to disqualify this theory.

2. The second is a modification of the first in that only the free ends of the cells degenerate, the fixed ends with the nuclei remaining.

3. That the cells of the mammary gland have the power of elaborating from circulating fluids of the body a secretion peculiar to themselves, cell destruction being no more necessary than in other secreting glands. The last would seem the most reasonable and is one accepted by many of the best authorities. Now if the secretion is to come from the circulating fluids of the body, and these fluids are replenished from the food, then to change the secretion of the mammary gland we must come back to the food. The problem is cornered down to giving the woman food that will increase the deficient ingredient in her milk or take away the food that is holding any one ingredient high.

There is an idea prevalent that a milk that looks blue and watery, being deficient in fat, can be corrected by the mother taking large amounts of fat in shape of cream. But the ingestion of fat as food *does not* increase the proteids, and so plenty of proteids increases the fat. Both the quality and quantity of milk are influenced by frequency of nursing. Poor milk often results from prolonged and irregular intervals of nursing. The oftener the breasts are emptied the richer the milk is in total solids and especially in the proteids. Of course this works well if proteids are deficient, but suppose the proteids are normal or above normal and the baby is put to the breast every time it cries, the proteids keep increasing and the baby keeps having the colic. Frequently the baby, irritated by the thirst of a slight indigestion, is thrown into a severe attack by the frequent giving of the breast to stop baby from fretting. The child wanted and needed water, but the only way to get it was through the breast, and it with its increased amount of proteids. So the very means of quieting is only the laying of the mine the explosion of which will be the signal to call a doctor.

In conclusion I will give the means at my command to regulate the composition of mother's milk in a tabulated form as given by Cotton of Chicago:

The percentage of proteids is increased by increased frequency of nursing, increased liberality of proteid food, insufficient exercise.

The percentage of proteids may be diminished by diminished frequency in nursing, diminished proteid food, increased exercise.

The percentage of fat is increased by increased proteid diet.

The percentage of fat is diminished by deficiency of proteid diet, excess of fatty diet.

The percentage of water is increased by increase of liquid diet.

The percentage of water is diminished by saline cathartics, diminished liquid diet.

As previously stated in this paper, sugar and ash vary but little, and the little they do vary seems to have but little if any effect on the baby.

PREVENTION OF CHILDBED INFECTIONS.*

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Childbed infections as here understood mean all the many diseased conditions that may come up in mother or infant during childbed period, caused by microbes, except eruptive fevers; non-inflammatory diseases of the nervous system, such as tetany, insanity, etc. Childbed infection in almost all cases is a wound infection; it may be a local infection of the external genitals, or in the infant of the umbilicus or eyes; or it may be a more serious infection of the genital organs (in the infant the eyes), most frequently the uterus, often the tubes and other pelvic organs, occasionally the system in general. Usually the infection starts from the endometrium, setting up a putrid or a septic endometritis. In putrid endometritis there is found in the uterus a superficial layer of necrotic tissue under which is a layer of granulation tissue, filled with phagocytes, or "devouring cells," which so ably help Nature in curing our patients. Septic endometritis may be a local condition or an inflammation followed by general infection.

We may have an infection in the infant. That generally takes place at the navel, or it may enter through the navel into the system, yet it is possible to enter the system through an accidental wound. Or it may be inspired into the lungs with putrid liquor amnii, or be inhaled with the air, or even pass through the placenta. The predisposing causes of infection in childbed fever are: Traumatisms of the various parts which facilitate the invasion of infectious germs. In the mother the anemic non-resisting condition of her blood in general. The increased muscular tissues in general, as of the heart, arteries, uterus, breasts, giving fertile soil for infection. The general exhaustion of the patient during labor, thereby lowering the resistance of the tissues in general. The high state of irritation of the nervous system, the exhaustion by pain, loss of blood, remnants of the placenta, or membranes, blood clots, retention embolism, which may decompose in the utero-vaginal tract. Tardy subinvolution

*Read at the April meeting of the Randolph County Medical Society.

may be due to septic endometritis. The lack of general sanitary surroundings, or any constitutional disease tending to lower patient's vitality, may predispose our patient to infection.

The exciting cause of childbed infections are the introduction of certain microbes into parts of the mother or child so infected. In nearly all cases it enters into parts so infected with fingers, instruments or other infected material by doctor, midwife, nurse or patient herself. Infections may have taken place before, during or after labor. I do not think that auto-infection is possible in any other type than as sapremia, unless vaginal passages are infected before labor. In the New York Maternity Hospital Reports in the year 1905 they had 951 labors, with no deaths and only two infections. In the records from 1875 to 1883 they averaged 4.17 per cent. of deaths, while under strict antiseptic precautions in the following few years their mortality was at once reduced to 0.87 per cent. Insurance reports give us in deaths in women between the ages of 18 and 40 years from 13 to 18 per cent. of deaths are due to infections, saying nothing of the invalid mothers owing their ill health to the milder grades of infection. These I am satisfied are often overlooked by midwives in general, and I am sorry to say by careless physicians who see their patients but once or twice in a labor case. Personally I never could content myself with less than five visits in town or two in the country, nor do I believe that good results can be given with less unless we have a trained nurse.

Nearly 50 per cent. of children that become blind shortly after birth, or 20 to 30 per cent. of blindness in children, is due to gonorrheal infection. Do not forget the possibility of tetanus infection entering the system through the navel.

Education of the mother as to the absolute necessity of engaging you early in pregnancy, instructing her in the care of her nipples and breasts, and general health. Get previous history in her labor cases. Examine urine of patient, as the case may require, for the possibility of albumen, sugar casts, etc. Examine patient at least once at the close of the ninth period for chronic infections or old lacerations, gaining information of approximate pelvic measurements and condition in general. Inspire mother with the necessity of everything in readiness to be in as sterile a condition as possible, of a warm sponge bath, a complete change of undergarments and bedding, of the advantages of the removal of the pubic hairs, of selecting a bright airy room, clear from dust-laden draperies.

I find a maternity packet, as put up by various manufacturing firms, does much to inspire mothers of its usefulness. Direct mother to have in readiness plenty of sterile water, basins, syringe, towels, to empty her bowels, with large cool enema and vulvar occlusion pad, and of calling you at once. Take with you a young trunk of supplies, including rubber Kelly pad, rubber gloves, gauze, antiseptic tablets and solutions, anesthetics, uterine stimulants and sedatives and hemostatics, silver eye drops, umbilical powder or salve, forceps, catheter, hypodermic syringe

and tablets, scissors, scale, knife, suture material, needle holder and needles, obstetric tractor, intrauterine douche, Voorhees dilator, placental forceps, hand brush. And don't forget to have all in as sterile condition as possible. Do not permit the family to supply you with infected material. Do not permit people with erysipelas, puerperal or wound infections in the room of the patient. Arrange bedding as well as patient in as sterile condition as possible, not forgetting your own and your nurse's hands and surroundings.

Examine your patient to satisfy yourself of fetal position. I feel that with practice on every opportunity offered us we soon can perfect ourselves to diagnose position and presentation of fetus by abdominal auscultation, percussion and palpation alone, thereby avoiding vaginal manipulation, and in so doing lessening the chance of infecting the mother. Permit labor to advance without interference until head presents at the vulva. Arrange table at your convenience, with wash basin, antiseptic solution, umbilical scissors, absorbent cotton, gauze, ergot, etc. Arrange bed with rubber sheet, Kelly pad, aseptic sheets, keep vulvar occlusion pad to parts changing often as soiled.

So regulate descent of head, by not permitting too rapid descent, by keeping head well up against pubes, by placing patient on left side, by giving anesthetic, by patient breathing short, by supporting perineum, all with the aim of preventing laceration, and getting rid of another source of infection. If laceration is inevitable episiotomy is proper. Make incision with long axis of body, suturing with catgut. I think by proper manipulation in delivery and extended experience this step rarely becomes necessary. Note that 35 per cent. of primipara and 10 per cent. of multipara are lacerated; certainly 50 per cent. of these are preventable by proper manipulation. Rectal manipulation is hardly consistent with aseptic work, nor do I see its advantages. Permit uterine contractions to deliver the body, unless interest of mother or child demand haste, not forgetting support of perineum here as well.

Support uterus well by pressure over uterus, continuing this for some time after third stage is complete. Wrap sterile gauze around navel cord, tie off when uterine pulsations cease or when third stage demands your attention. Maintain rigid asepsis of vulva and cord. Await ordinarily one-half hour, or until pulsations cease, cutting cord as short as is consistent with safety, dust with salicylated zinc, seal with borated gauze, cotton and binder. Wash out infant's eyes with a 2 per cent. boric acid solution, and if not certain of non-gonorrheal infection instil a 2 per cent. silver nitrate solution or 25 per cent. argyrol solution, continuing boric acid washings for a week. Now begin massaging uterus by Credé method, if in vain again getting your hands and vulva in aseptic condition and by aid of fingers, or placenta forceps, never applying traction on cord until it is well down into vulva, removing placenta. Examine placenta carefully and see that all is well removed, maintaining dorsal position of mother, and firm pressure over uterus to maintain uterine

contractions, giving ergot in sufficient doses to accomplish same; abdominal binder properly applied is good, keeping in mind the possibility of air embolism.

If you have been able to maintain aseptic passages, washing and sealing of vulva with occlusion pad and maintaining it so is all that is necessary. But if you find discharges with fetid odor, temperature of 101 or 102, I think saline or ½ per cent. lysol vaginal douching, or even intrauterine douching is essential, possibly dry uterine gauze drainage is better, never neglecting thorough frequent vulvar antiseptic washings and occlusion pads, repeating douches to maintain passages in as aseptic condition as possible. If catheterization becomes necessary do not neglect all antiseptic precautions here as elsewhere, as cystitis is more easily produced than cured. In lacerations of perineum or cervix, first of all prevention or lessening in extent by all methods possible in our power, as previously stated. Second, suturing, at least in the first twenty-four hours. Ordinary cervix lacerations seem to me to do best by strict aseptic occlusion pads and antiseptic vulvar washings, but if we find fetid discharges and 101 degrees of temperature I think best to give antiseptic douches often enough to maintain it fairly aseptic, if severe extensive lacerations, suturing cervix later as condition of case presents itself. Instruct your nurse to be thorough as to herself and everything coming in contact with mother. Irrigate the vulva with mild antiseptic solutions, changing occlusion pads frequently, etc.

I notice in the cities, from a medicolegal standpoint, that childbed infections are forming a basis of not a few malpractice suits. May I ask how long will it be until we here will be expected to follow their footsteps as to aseptic obstetrics? I well realize the impossibility of country practitioners getting hospital results. Nor do I want you to think that I am able to get these results; nay, indeed, it is having infections which induced me to investigate this branch of medicine away from home. May I ask, do we always do all in our power, by education of our patients, by instructing our nurses, and by equipping ourselves with aseptic materials, to prevent these conditions and are we not prone to make ourselves believe that the fool people don't want this kind of treatment, thereby consoling ourselves for the great mortality from this group of diseases, saying nothing of the chronic invalidism of many of our patrons. I never could see the consistency of visiting a simple case of pneumonia daily for ten or twelve days, while a woman in confinement received our attention but once or twice. Certainly we deprive ourselves of the opportunity of being able to recognize our patient's condition in its early stage, and certainly entirely overlooking the many milder cases of infections, finding our patient with a pulse of 100 to 110, temperature of 101 to 102, are we justified in consoling ourselves with the statement to the family, that a slight congestion of the breasts, or that too many visitors to-day, account for her condition, without first being sure of the odorless non-septic condition of the vaginal discharges and uterovaginal passages in general?

SHOULD DRUGGISTS MANUFACTURE AND DISPENSE MIXTURES OF THEIR OWN, AND IS IT ADVISABLE THAT DOCTORS DISPENSE THEIR OWN DRUGS?*

H. E. Irish, M.D.
CHICAGO.

From time immemorial institutions have been measured by their usefulness to the public and by this measure have they stood or fallen. Self-advancement, mercenary acquisition or individual aggrandisement bear no part in the estimation which a public puts upon a profession. The ultimate height to which our banners will fly must be determined by one standard—value of service.

By the custom and tradition of centuries the care of the public health has been intrusted to the hands of the medical profession and its adjuncts, and our present-day eminence in the economics of the state stands as an evidence that that trust has not been violated. In the hope of deepening our regard for the public weal, in the thought of augmenting the value of our service to our public, we meet here to-night for consultation and consideration of the best methods of placing the best drugs in the hands of our people.

One hundred years ago the function of the pharmacist and physician as we know them to-day were much mixed. Empiric dispensing went hand in hand with empiric prescribing, and from this chaos of error arose a forest of untimely gravestones to mark its passing. We of to-day are living in an era of specialism where the various functions of the physician have been delegated to men especially trained in the requisites of that branch. Physicians, strictly speaking, do not extract teeth, perform special and dangerous operations without the help of a surgeon, nor do they compound and dispense their own drugs, and these divisions of function have made for the betterment of our general service to the public.

An especially large and important assignment of function has been made to the pharmacist, from whom in his proper sphere results of the greatest importance and satisfaction have been attained. Nevertheless, unfortunately, evils have arisen of such magnitude and import that the medical profession needs take cognizance of them. Foremost among them perhaps is the one which we know generally as shelf or counter prescribing, by which we mean diagnosis by conversation and prescription by speculation. This evil fortunately is not general and I believe is waning, especially in the last two years, and I believe will wane faster would physicians as a matter of duty point out to the pharmacist the peculiar and far-reaching effects of this pernicious custom. Most well-informed pharmacists never prescribe; many of the older pharmacists prescribe occasionally while condemning the practice, and others prescribe and recommend indiscriminately as a matter of good fellowship or false idea of gain.

*Read before the Northwest Branch of the Chicago Medical Society, April 3, 1908.

Perhaps the most generally counter prescribed disease is gonorrhea. All physicians realize fully the wonderful persistence of these bacteria when hidden away in the various glands and crypts tributary to the urethral canal. They may persist in viable form for years. Now, Mr. Dispenser, are you prepared when you undertake the treatment of such a case to also determine when it is terminated? When your man no longer sees his "morning drop" are you equipped to say whether or not he is cured? Do you stop to consider the honorable bride and her peritonitis, the unborn child and its gonorrheal conjunctivitis, and when you see the silken crepe floating from that bride's door reflect; when you see that babe groping his way through life with his sightless eyes bared to the public gaze, let your memory run back to the man who came to your counter, received his copaiba capsules and zinc injection and went away ignorant of his infective possibilities.

Do you ever stop to think that the man who comes in wanting "something good for a cough" may be suffering with an enlarged thyroid, an interpneumonic abscess, an aortic aneurism, a pleurisy or a beginning pulmonary tuberculosis? Yet the same excellent cough cure does for one and all, and your customer lets the valuable first day drift away and, lulled into a sense of false security by the opiate content, passes into an incurable stage, finally coming to a physician to hear his death sentence —"too late." He dies and brings reproach upon all medicines and all men who deal in them.

Are you prepared when you dispense "something good for a sore throat" or "something good for croup" to verify your conversational diagnosis with a high-power microscope? Two fatal cases of tonsillar diphtheria have come to my observation during the past year and three fatal cases of laryngeal diphtheria, commonly known as membranous croup, in all of which there had been a preliminary course of so-called "harmless" cough cures, gargles and home treatment. When we come face to face with the positively demonstrated fact that each and every one of the cases was curable at one stage of the disease by the simple injection of a dose of antidiphtheritic serum, is it not pitiful?

A little more than a year ago a patient came to me with a bottle of pain reliever in his coat pocket, "something good for cramps." He complained of an excruciating pain in his abdomen, which an examination showed to be a small but tightly strangulated hernia. A midnight operation relieved his pain and saved his life. Just how many cases of pustular appendicitis have been permitted, under the influence of "cramp medicine," to develop into a fatal general peritonitis I am not prepared to say, but I believe the number to be large.

A large proportion of requests to the druggists from self-medicators comes in the form of "something good for a physic." I believe that nearly all if not every case of chronic constipation is the direct result of laxative medicine which weakens while it serves. Begun in infancy with "castoria," fig syrup and what not (always containing senna), continued through childhood and adolescence, we meet them in adult life, pallid, icteric or eczematous, living a life made miserable by the constant specter

of the pill box or fountain syringe. Every one of these cases at one time was curable. Every one under the corrective influence of a properly directed régime of diet and habits, of massage, exercise and electrotherapy, together with a few properly selected drugs, could have passed his years of adult life in peace and pleasure were it not for the pernicious bowel weakening and bowel paralyzing, promiscuous physicing with improperly directed drugs. Instances of misapplied therapeutic measures, such as rheumatism medicine, generally salicylates, for bone and tendon tuberculosis; dyspepsia mixtures for gastric ulcer and carcinoma, etc., all of which prove without question the absolute foolhardiness of the conversational diagnosis and speculative counter prescribing where a small first cost is large and the large final cost in money and lives is considered small.

Most of the pharmacists' special mixtures are manufactured, I believe, with the object of meeting the competition for largely advertised proprietary articles, in whose sale there is a small margin of profit to the retailer. But if we are to be co-partners in the practice of an exact science, we will put the cough cure, the headache powder, the gonorrhea injection and the prepared gargle in the background, dispensing instead the prescription exactly fitted to the needs of the case by a competent and conscientious physician who has made an exact diagnosis. As for the profits, the margin of profit on the prescription is infinitely greater than upon any self-compounded nostrum. If you wish to evince your good fellowship for your friend and customer, there is no way in which the everlasting gratitude of your friend may be so surely gained as by directing him to a properly equipped physician who will not only relieve his symptoms, but remove the cause of the disease. The plea that the other fellow does it is a weak one—other men are always doing wrong. Honesty, frankness and decency are the best paying stock in trade of any man in any business. Also bear in mind that the custom is waning and the more intelligent people approve the pharmacist who is willing to say, "I am a pharmacist and a good one; I am not a physician and a poor one." It is an attribute to your astuteness to confess your limitations, for sooner or later the error of delaying proper treatment will be manifest and you will have lost not only prestige, but profit.

Let us turn to the other question for a moment, the dispensing doctor. With this side I am not so familiar, never having dispensed a bottle of medicine nor passed along a sample, yet we are fairly familiar with the arguments advanced in its favor.

First, there is the plea of greater privacy between physician and patient, which is unanswerable, for certainly a two-party affair is necessarily less general than one of three parties. Is it essential? I have never yet come in contact with a case in my own practice where, to my knowledge, any exposure of my patient's affairs had been made in any form. I can scarcely conceive the mental state of a pharmacist who is so blind to his own interests as to acquire a reputation as a gossip or tattler.

Then there is the familiar argument, the doctor has better control of his case because his prescription can not be refilled without the doctor's

approval. This can easily be obviated by simply writing or, as many physicians do, by having printed upon the prescription blank the Latin phrase, "*Ne repetatur.*" I can truthfully say that no druggist has ever violated this injunction so far as I have known.

Another familiar argument is the difference of cost to the patients. It may be less at times, but should never be great enough to be essential nor offset other advantages.

What are some of the disadvantages of the doctor dispenser? For one thing, his stock of drugs will consist more or less of prepared combinations, and much of this will be in pill or tablet form. Can he reach the exact variation of dose of the different ingredients of a set combination to exactly meet the almost innumerable conditions which will arise in treating such a common disease as pneumonia? I doubt it. Can he be assured that the pills or tablets are as soluble and viable as the same combination of ingredients will be in powder or capsule form? I doubt it. Four years' experience in a pharmaceutical house supplying such preparations to physicians convinced me by the endless series of complaints of the insolubility of pills and tablets that such preparations are neither dependably soluble nor effective.

Does not the dispensing of certain set formulas without regard for the individual needs of the case tend to dwarf the therapeutic ability and intellect of the physician, does it not arrest his opportunity to investigate and approve new combinations and hinder the advance research work of the profession as a whole? Does not the cut and dried formula fit the patient to the drug rather than the drug to the patient?

Furthermore, must not any dispensing doctor at some time, owing to the natural limitations and occasional shortages of his stock, rely upon the neighboring pharmacist in case of emergency? Is not the doctor avoiding a duty when he fails to support the man and institution which must be his helper in the time of greatest need? Can a horse live on half-oats and be as good a horse? I fail to understand how a physician who is fairly busy can devote sufficient time to compounding properly his own drugs in such a manner as to render them most efficient after the manner of the skilled pharmacist.

I am willing to recognize that in certain emergencies a druggist may dispense certain drugs with propriety, but in our cities, with our wealth of well-equipped pharmacies and pharmacists, our wealth of well-schooled physicians of every specialty and generalty, why should either assume the function of the other? I like to think that the time will come when every physician will write an ethical prescription. By this I mean one composed of recognized United States Pharmacopeia and National Formulary drugs; when every pharmacist will properly compound these prescriptions with fresh, potent drugs; when every dose of medicine taken by the public will be sanctioned by a written order from a competent and conscientious physician—then and then only will our annual death rate from curable disease reach its just figure, which will be nearly zero; then and then only will the swarm of vultures who prey upon the public

—Eddyites, osteopaths, sun-worshipers, fruiteaters and what not—starve for lack of sustenance and silently fly away, for by our own errors are they nourished; then and then only will the public accord to us the preeminent place in its estimation, for we shall be measured by our true standard of worth—value of service.

678 Grand Avenue.

REMOVAL OF THE PATELLA FOR UNUNITED COMMINUTED FRACTURE.*

CASSIUS C. ROGERS, A.M., M.D.
CHICAGO.

Mr. A. J. C., aged 30 years; occupation, medical student; family history, negative; no tubercular or specific history. On November 18, 1905, while invoicing stock in the storeroom of the Stratford Hotel, a

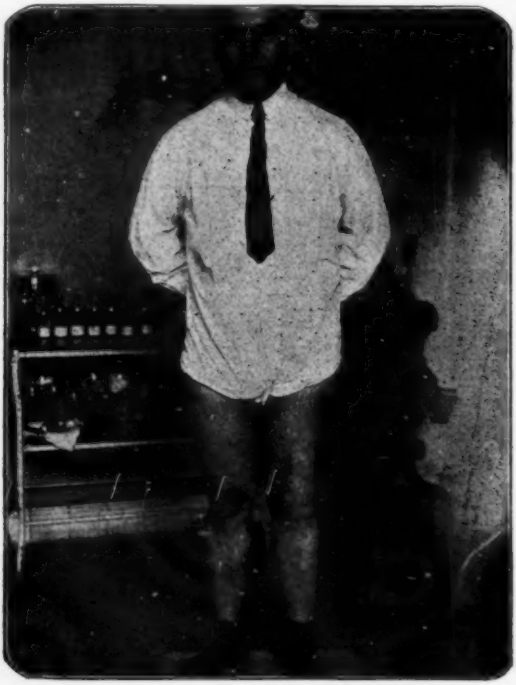

Fig. 1.—Showing line of incision colored with Tr. Iodin to make it more distinct.

pile of heavy boxes packed with case goods (setting unevenly on the floor) tilted forward. In an effort to save them from falling, his hands being engaged in holding the stock-book and pen, he pushed his knee for-

* Exhibit before the West Side Branch Chicago Medical Society, March 19, 1908.

ward against the boxes. There was a loud pop, he was unable to extend the leg or stand on it, and there was considerable swelling in a very short time (half an hour).

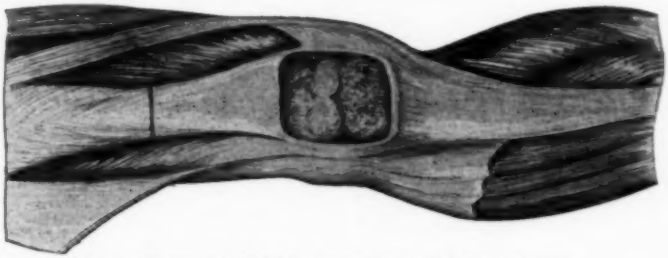

Fig. 2.—Transverse incision across the quadriceps extensor.

A physician was called, who found a complete transverse fracture of the patella with about one inch of separation between the fragments. He was taken to the hospital, and the next day the fragments were placed in

Fig. 3.—Flap of quadriceps extensor turned down and sutured to the patella tendon.

apposition as nearly as possible and dressed with adhesive strips to hold them in place. He remained in bed eight weeks, then walked with crutches three months, wore a leather cast seven months. A fibrous

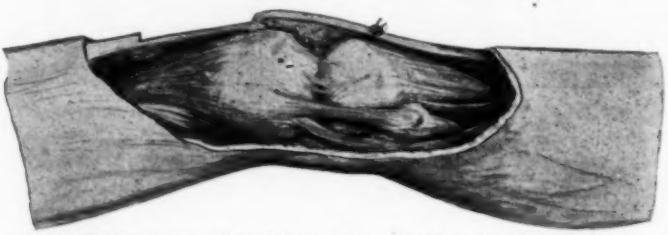

Fig. 4.—Lateral view of quadriceps extensor and anterior flap reflected.

union formed between the fragments, which at first were not more than half an inch apart. When he began to use the leg at the end of seven months this union began to stretch, until two or three fingers could be laid between the fragments.

On October 5, 1906, or eleven months after the first fracture, he slipped while going down stairs, breaking this fibrous union. The knee at once became greatly swollen (nearly three times its normal size), he was sent to the hospital, and it was decided to operate and wire the fragments together. The knee was kept covered with ice-bags and he remained in bed four weeks waiting for the swelling to subside. At the end of this time the patella was exposed by a longitudinal incision, the ends of the bones curetted and wired together. He remained in bed eight weeks after the operation, walked with crutches two months and a cane one month, wore a plaster-of-Paris cast two months and a leather cast two months. The bones did not remain in apposition, and about six months after the operation there was about three-fourths of an inch separation between the fragments. He has never been able to put his full weight upon the leg (as in going upstairs) since the first fracture, nor to flex or extend the leg to more than an angle of ten degrees. On

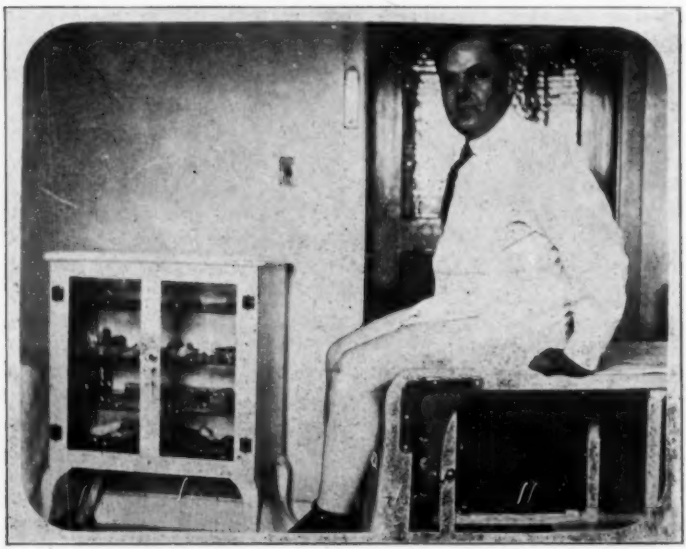

Fig. 5.—Showing the degree of voluntary flexion 9 weeks after operation.

January 12, 1908, fifteen months after the second fracture and twenty-seven months after the first fracture, while walking about the room at home his knee gave way and he fell to the floor, breaking the wires and what little union, if any, that had formed, and the knee began to swell rapidly.

When I first saw the patient he was lying on a couch, his knee covered with an ice-bag. The knee was greatly swollen and very painful. The fragments of the patella were separated three fingers' breadth. I at once took him to the Frances Willard Hospital, and as there had been

two unsuccessful attempts to secure union of the fragments I advised the removal of the patella. The patient was anesthetized (chloroform) and a long incision made along the inner border of the patella extending from the attachment of the patellar tendon to the beginning of the quadriceps extensor tendon (Fig. 1). The skin was reflected outward and the patella exposed. It was found to be soft and could be easily broken. No union had taken place since the last fracture fifteen months previous; the fragments were simply held together by the silver wire, and when the wire broke the fragments readily separated. The patella was removed and a modified Murphy operation done:

1. The tendon of the quadriceps extensor was cut entirely across from left to right at its origin from the muscle, as illustrated in Figure 2, the incision extending only half through the tendon antero-posteriorly.

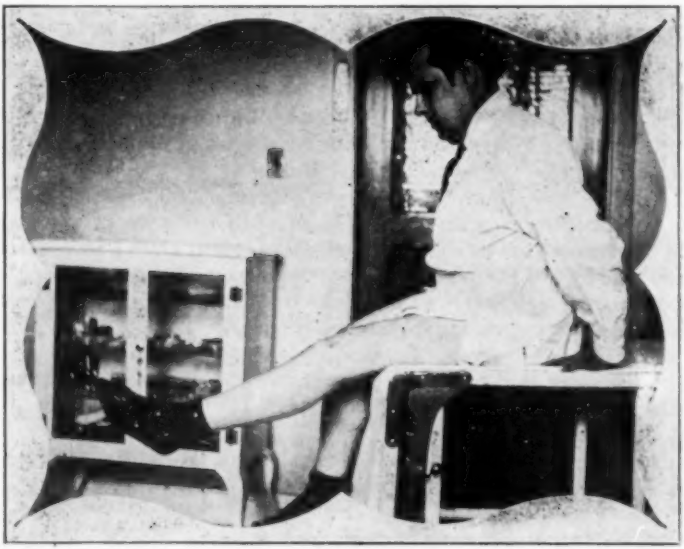

Fig. 6.—Showing the degree of voluntary extension 9 weeks after operation.

2. The tendon was now split to within a short distance, one-half inch, of its patellar attachment, and the flap thus formed reflected downward and sutured to the patellar tendon, as illustrated in Figure 3, using one heavy silk tension suture, the remainder of the suture material used being catgut.

3. A lateral view of the same is shown in Figure 4.

4. The skin was sutured with interrupted sutures of silkworm gut. An interrupted plaster-of-Paris cast was applied. The wound healed by primary union. The skin sutures were removed on the eighth day and the patient was allowed to get up in a wheel chair, was up on crutches in two weeks and back to his studies in three weeks.

5. Figures 5 and 6 show the amount of flexion and extension nine weeks after operation. There is absolutely no discomfort, and the patient says the limb is as useful as the normal one in every respect.

SUMMARY.

1. The patella is unessential for a flexible knee-joint.

2. The patella can be removed when ununited and perfect flexion and extension procured.

3. The patella should be removed when ununited or when repeated fracturing occurs.

4. When there is cartilaginous union and extension is lost, function can be restored by removing the patella and joining the quadriceps tendon to the patellar tendon.

5. By removing the patella the patient is confined to bed but a short time compared with the time required after strapping with adhesive, or after wiring—one week for removal and eight weeks for strapping in this case; one week for removal and twelve weeks for wiring in this case; away from work three weeks after removal and five months after strapping and five months after wiring.

6. I am indebted to Dr. J. B. Murphy, Chicago, for the idea (paper read before the Chicago Surgical Society, December, 1907, published in *Surgery, Gynecology and Obstetrics*, March, 1908).

7. Differences between Dr. Murphy's operation and mine:

(a) Dr. Murphy unites a lateral half of the quadriceps extensor, including some of the muscle, to the patellar tendon, while I unite the anterior one-half of the quadriceps extensor to the patellar tendon.

(b) Dr. Murphy sutures the muscles together, constricting the base of the flap. I do not suture the muscles together.

(c) The flap made by Dr. Murphy is almost circular and narrower than the space left vacant by the removal of the patella. The flap I make is flat, smooth and broad enough to readily cover the space made by the removal of the patella.

(d) Dr. Murphy operated for tuberculosis of the patella. I operated for ununited comminuted fracture of the patella.

72 East Madison Street.

THREE CASES OF CESAREAN SECTION, TWO VAGINAL AND ONE ABDOMINAL.

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CHICAGO.

The vaginal Cesarean section has gained a lasting place in the operative obstetrical resources. It is recognized as a valuable additional method, and in well-selected cases it is the treatment par excellence. The great many cases reported, as well as the voluminous literature on the subject, are testimonial evidence of its great importance. As the literature of accouchement forcé was recently reviewed by H. F. Lewis, and

of the vaginal Cesarean section by R. Holmes, I shall limit myself to report these cases and make a few remarks on the operative technic.

Mrs. H. L., age 40. Always resided in the city. Family history: Niece of the patient has epilepsy. Personal History: Has had inflammatory rheumatism and typhoid fever. No history of pelvic diseases. Married at 39 years. Labor at full term began at 8 a. m. July 20, 1905. The pains became very severe in the afternoon and evening and part of the night; practically ceased during the early morning of July 21, became active again in the afternoon and lasted during the night, stopping completely at 10 a. m. of the following morning, thus slightly over a duration of fifty hours. The patient was seen by me at about 3 o'clock in the afternoon of the same day, thus fifty-five hours since the beginning of labor. A competent assistant was in charge of the case since the onset of the labor and reported its progress to me from time to time.

Examination of the Patient.—A weak woman, primipara, 40 years of age, slight murmur at the apex, lungs negative, very fatigued and almost totally exhausted. Pulse 120, temperature 99½. Some of the small parts could be felt at the fundus. We were quite sure tnat the head presented. Fetal heart sounds audible but very rapid. The vagino-pelvic shows a normal but tight and resistant perineum, vaginal walls normal along conical cervix with practically no effacement or dilatation of the external os. Presenting parts at pelvic inlet.

Diagnosis.—Woman at full term of pregnancy. Uterine inertia, due to the mechanical interference caused by a rigid cervix. Extremely exhausted with endocarditis, and her heart showing the effects of fatigue.

Treatment.—Stimulation of the patient. Recommended accouchement forcé. If this procedure fails, advise vaginal Cesarean section. Dilatation by the method of Philander Harris, as well as the bimanual, both proved unsuccessful. The metal dilators were tried, with some damage inflicted to the cervix. When threatening serious injuries to the cervix appeared, the use of the instrument was desisted. The incision of the cervix was now carried out, but the hysterotomy, followed again by bimanual dilatation, did not stimulate any strong uterine contractions nor did it admit the introduction of forceps. The vaginal Cesarean section according to Dürhssen method was now performed under rigid asepsis, forceps were applied, the head brought down to the perineum. Left deep episiotomy was now performed and the delivery completed; the placenta expelled by Credé. Repair of the uterine flaps and of the perineum, light vaginal tamponade and patient put to bed. Marked shock present, pulse ranging from 130 to 140. temperature 100.3. Saline infusion was necessary. Postoperative course: Slow convalescence, daily temperature from 100 to 101 for the first two weeks. The patient did not leave her bed until the beginning of the fourth week following the delivery. Child normal and doing well.

Case 2.—Mrs. T. P., age 36. Has lived in Michigan until about two years ago. Since then has resided in Chicago. Family history negative. Personal history, married at 20. Has had four children, all healthy and living. The youngest is 4 years of age. Labors normal. Never has had any miscarriages, nor pelvic disease. About two and one-half years ago she had the cervix uteri amputated for multiple laceration. The operation was performed at the home of the patient in Detroit, Michigan. According to her statement, the postoperative convalescence was normal. She was up and about the twelfth day after operation. March 4, 1904, 4 p. m., I was called to the patient's home and from the attending midwife and partly from the patient herself I obtained the following history: Last menses occurred about June 10, 1903. The labor pains began in the afternoon of March 17, 1904; thus at full term, lasting all night and were particularly severe between 3 and 8 a. m. of March 18. Became weaker and finally stopped entirely at 10 a. m., to begin again at 2 p. m., lasting until about 11 p. m. of the same day. Weak repeated uterine contractions were felt in the morning of March 19, but none occurred since 12 a. m. She complained particularly of a painful, severe resistance low down in the pelvis during a labor pain. She remarked that there was abso-

lutely no progress made and all her efforts were in vain. She was examined only once by the intelligent midwife. My examination revealed a robust, well nourished woman, extremely fatigued and exhausted, restless and nauseated, with a pulse of 120 and a temperature of 100; chest negative. The abdomen presented the usual uterine ovoid, but the fundus reached considerably below the xiphoid cartilage. The abdomen was extremely tender on palpation and prevented a complete satisfactory external examination. The fetal sounds were audible. The vagino-pelvic findings were, the perineum showed evidence of an

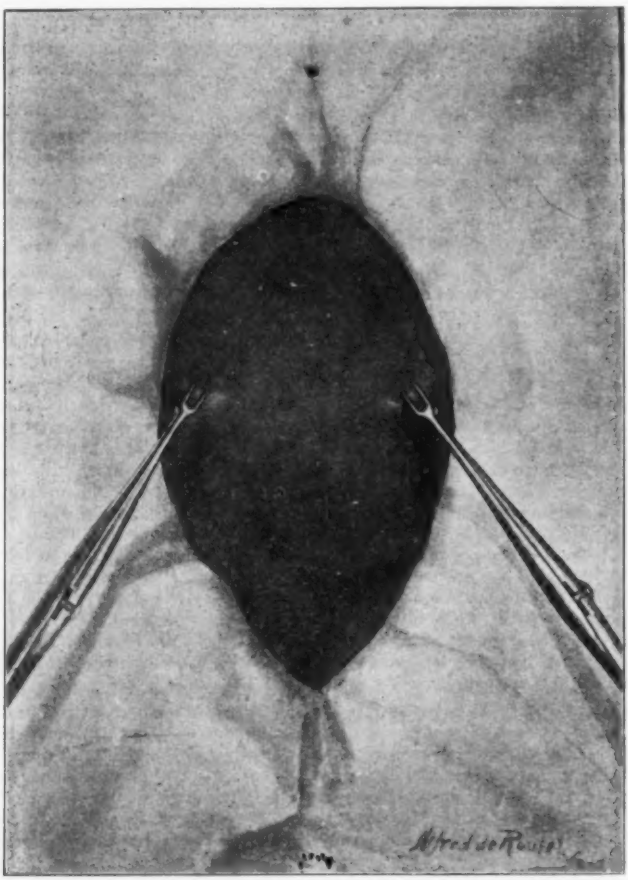

Fig. 1.—Black dot umbilicus. Uterus is seen in the abdominal incision, held against the abdominal wall by two vulsella. The abdominal wall divided is separated from the uterus by laparotomy towels, thus shutting off the peritoneal cavity.

old extensive laceration. The rectum is empty, the bladder is sunken in the pelvis much lower than it should be. There is no cervico-vaginal sulcus, but the vaginal walls terminated into a thick and hard ring of scar tissue, admitting the tip of the index finger. This is the new external os created by the amputation of the cervix. It has been displaced downward toward the vulva and it has

carried with it the anterior and posterior vaginal walls. Fortunately, the membranes were not ruptured. A head presentation could be made out and it had entered the superior strait.

Diagnosis. Uterine inertia due to the mechanical interference of a rigid ring of scar tissue, one and one-half inches in width. The pathological changes were brought about possibly by the trauma inflicted on the cervix by the previous labors, followed by inflammatory changes, resulting in destruction of the uterine muscle cells, proliferation of the connective tissue cells, maturation of this new connective tissue, and the formation of a firm round cicatrix, thus forming the new unyielding os. To what degree the amputation of the cervix contributed to these changes is difficult to say. Broadly speaking, we may state if primary union occurred, the operation need not to be considered as an etiological factor, while, if infection took place, it may be responsible for the entire pathological lesion, for many stitches are required to approximate accurately the uteral vaginal mucosa, and each needle puncture is an atrium for infection.

Treatment. The patient refused to be removed from her home to a hospital. Therefore, the work had to be performed under difficulties. Stimulation of the patient with quinin and strychnin and uterine massage. The successful dilatation of the cervix, manual or instrumental, was thought by us as a hopeless task, as cicatrix tears but does not dilate. However, both methods were tried and failed. The next procedure was the division of the cervix, anteriorly and posteriorly. Light tampon of the vagina with iodoform gauze. Waited two hours for uterine contractions to terminate labor. Not succeeding with the conservative methods and the condition of the patient becoming more alarming, the classical vaginal Cesarean section complicated by the absence of the cervix was the operation elected. Williams, H. F. Lewis, Dürhssen, Wirtz and others recommend this procedure in similar cases.

Operative technic. Lithotomy position. Chloroform anesthesia. Catheterization of the bladder. Rectum being empty did not require any attention. Thorough disinfection of the perineum, thighs, pubes and vagina, with soap, bichlorid, alcohol. Temporary closure of the anus with a silk purse-string suture; aseptic isolation of the field of the operation, and lastly, the painting of the perineum, vagina and cervix with a tincture of iodin. Assistants wore gloves, operator did not. Antero-posterior retraction. The separation of the bladder and rectum from the lower uterine segment was difficult on account of the anatomical landmarks being obliterated by the amputation of the cervix. This first step was performed with blunt point scissors with the finger as a guide and beginning the separation on the uterine side of the fibrous ring. Once the uterine margin separated enough to allow the application of the vulsellum; the bladder was easily separated from the uterus. Care exercised not to enter the peritoneal cavity. The posterior dissection of the uterine peritoneum was recognized as impossible, and therefore the diversion of the posterior uterine wall extended upward for about one and one-half inches, thus avoiding entering the peritoneal caviety. Two vulsella were now applied on either side of the median line of the anterior uterine wall. The latter was now divided to the extent of about six inches. Considerable hemorrhage took place from the margins of the uterine flaps, which was easily controlled by traction applied on the vulsella. The latter were now replaced by heavy silk ligatures, intended to prevent any delay after delivery, as well as to limit the manual maneuvers to a minimum, for this patient had no cervix. The forceps were not applied to the presenting head and a nine-pound living child extracted. The placenta was expelled immediately by Credé, careful coaptation of the uterine flaps with a No. 3 catgut. The vaginal and uterine mucosa united with catgut No. 1. Light vaginal tamponnade with iodoform gauze. The post-operative convalescence was entirely normal, patient being about two and one-half weeks after delivery.

CONCLUSIONS.

1. The metal dilators of the Bossi type are not bloodless methods of artificial dilatation.

2. Sellheim, Martin, Dürhssen, quoted by H. F. Lee, as well as Bacon and H. F. Lewis himself, consider the method dangerous. DeLee had three Bossi cases, all fatal (Lewis).

3. H. F. Lewis quotes Berdeleben, who reports six cases of Bossi with serious injuries to cervix, broad ligaments and lower uterine segments. The statistical material has not arrived at a point where the mortality to the mother and child can be accurately defined.

4. The vaginal Cesarean section, says Dürhssen, is without danger to mother and child. This is not so, for all operative measures carry a mortality. The anesthesia alone plus the infection and the danger of hemorrhages, as well as the injuries which may be inflicted to bladder or rectum, are sufficient grounds for such a major operation to carry a mortality.

5. The vaginal Cesarean section is an ideal method to accomplish delivery in well selected cases. It should leave less later bad uterine complications, for divided uterine flaps heal better than the crushed and lacerated cervix by the Bossi dilator.

CASE 3. Conservative abdominal Cesarean section. Mrs. J. R. Age 32. Residence, Chicago. Family history, negative. Personal history: Has had typhoid fever when 16 years of age. Married at 20. Has had four chidlren, all living and in good health, the youngest being born ten years ago. Labors all normal, never any miscarriages nor pelvic diesases. Was a widow at 28. Married again at 29. One year later was delivered at full term of a normal child, weighing between nine and ten pounds, but craniotomy had to be performed. At 32 became pregnant again and presented herself for examination at about the fourth month of pregnancy, stating her anxiety of giving birth to a living child. The same desire was also emphasized by her second husband. A complete examination of the patient at this date disclosed a tumor situated in the right lateral wall of the pelvis, apparently originating from the bony or cartilaginous structures of the pelvic wall. Hard to the touch, and fixed. This tumor mass encroached considerably into the pelvic cavity, possibly to the extent of one to one and one-half inches; undoubtedly, it furnished the indication for the craniotomy performed two years previously. The patient was in good health, devoid of pains. The symptoms made it very probable that the nature of the tumor was of a benign character. She was not informed of the presence of this growth, but was requested to report monthly. The labor occurred at the normal period. My monthly examinations during the course of pregnancy as well as the one at the time of labor informed me that the tumor had not increased in size, although it was too large to permit a successful delivery. The true condition of the patient was now explained to her husband in her presence and the methods of delivery applicable to her condition were discussed. Craniotomy was suggested, but was not accepted. Pubiotomy and symphyseotomy, as they offered only a slight chance of delivery with a living child, were also rejected. Therefore there remained only for our consideration Cesarean section, which offered the best possible method of delivery with a living child and a living mother. She was removed to the Policlinic Hospital and operated successfully June 10, 1906, child living, weighing nine pounds.

Operative technic. Median line incision extending from an inch above the pube to nearly the umbilicus. Skin, subcutaneous tissue and fascia and perineum divided. Isolation of the abdominal walls from the uterus by means of

laparotomy towels. The bladder recognized and two vulsella (Pean) applied to the uterus on either side of the median line, (see Plate I) and slight traction exerted on the vulsella by the assistant, thus keeping the anterior wall of the uterus firmly against the abdominal wall. Median uterine wall incision, five to six inches in length. The left hand now introduced into the uterine cavity, seizing the feet of the child and the delivery of same, and handing him to the assistant in readiness. Removal of the placenta. As these maneuvers were executed, two important little details were carried out, one by the assistant and another by the surgical nurse. The first was to exert slight traction on the

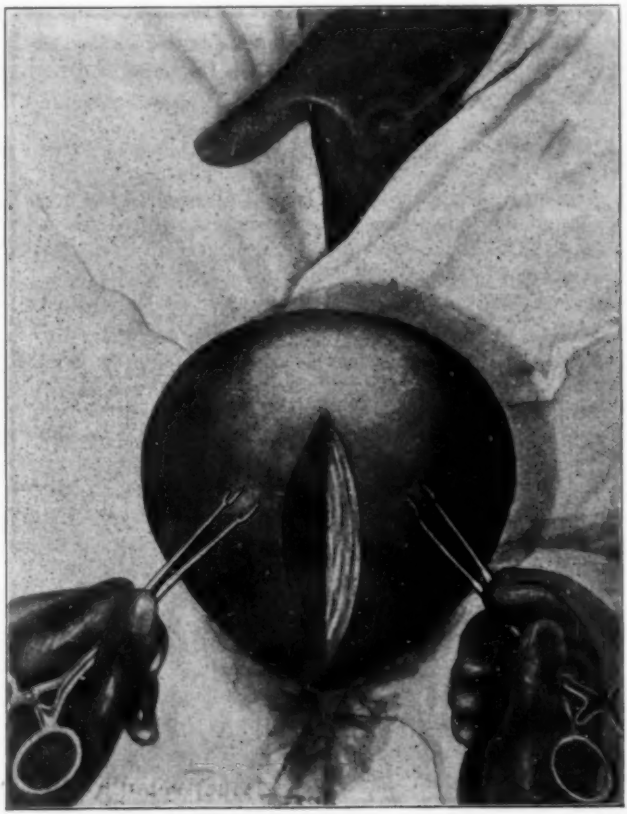

Fig. 2.—The child and placenta have been delivered. The uterus is shown drawn out of the abdominal cavity. The hand is tucking in a towel to prevent escape of intestines. The drawing should show the two vulsella in the right hand of the assistant, thus, with his left hand free, he is ready to control the circulation if necessary by grasping the uterus at lowest point possible.

uterus, by means of both vulsella held by the right hand of the assistant, thus delivering the uterus out of the abdominal cavity and to seize the uterus by the assisstant's left hand at the lowest part of the uterine body, thus controlling the circulation, if necessary (Plate II). The step carried out by the nurse was to follow the uterus as it was delivered through the median incision, with a

thick towel preventing the intestines from escaping through the abdominal incision. No serious bleeding took place. Repair of the uterine incision with a No. 3 catgut interrupted suture, the first layer being introduced into the uterine wall just below the peritoneum and the next layer suturing the peritoneum only. Uterus returned and the closure of the abdominal incision by means of the longitudinal wires, one for the peritoneum and one for the fascia and one for the skin. The tumor was not removed and appeared to be a chondroma.

Post-operative Course. Temperature and pulse slightly elevated for a few days, then normal in every way. Rapid recovery, the patient leaving the hospital the ninth day after operative date.

The three cases were re-examined about two months ago and are in perfect health. In Case 1 there is only a slight scar of the cervix which shows the site of the incision. The cervix is normal in every way.

ADVANTAGES OF THE TECHNIC.

1. Small abdominal incision, hence less chance for hernia, less time to close abdominal wall.

2. Avoidance of uterine manipulations, thereby the uterine walls and the child not being liable to injury, for squeezing the uterus through too small an incision may provoke a thrombus and embolism, or detach the placenta, causing the death of the child.

3. The assistant is in a position to control circulation in an instant if it becomes necessary.

4. Reduces the danger of infection, since the soiling of the abdominal cavity is prevented.

5. It allows the uterus on the surface of the abdominal wall, where a better coaptation can be executed.

6. It shortens the duration of the operation, therefore lessening shock. It should reduce the mortality.

7. The uterine wall should be incised and not torn with the fingers, since that is not a source of hemorrhage. The placental site is the source of bleeding when it occurs.

THE EXUDATIVE DIATHESIS.*

C. G. GRULEE, M.D.
CHICAGO.

The exudative diathesis is, as the name implies, a pathological condition rather than a clinical entity. As the originator of the name, Czerny, of Breslau, states, it is chosen in preference to the term scrofulosis more because the latter implies a tubercular disease than for any other reason. And yet as Czerny himself describes the affection it is much more comprehensive than our present ideas of scrofulosis, the manifestations of the condition are more distinct, and especially in infancy the conception is decidedly different.

In the exudative diathesis we have an inherited condition which may show its earliest manifestations in the first weeks of life and which, as a rule, continues in a more or less severe degree until puberty or even

*Read before the South Side Branch of the Chicago Medical Society, Feb. 20, 1908.

after. The severity of the clinical manifestations depends greatly upon the severity or extent of the condition in the parents, but the most potent factor is the hygienic or rather unhygienic conditions under which the child lives, i. e., as to its exposure to infections. Thus we most often encounter it in those who have moved from the pure air of the country into the germ laden air of the city, and in the poorer classes, especially if they are crowded together. The inherited condition is essentially a predisposition to infection of almost any type and seems peculiarly to reduce the resistance of the skin and the respiratory tract.

Two types of babies are affected—the one thin and frail, the other fat and apparently robust, and strange to say, it is the latter type in which the exudative diathesis is peculiarly severe and in which we encounter the most striking and disastrous effects of infections.

The first sign of the affection comes when we find that in spite of sufficient and proper breast milk for food the child does not attain its initial weight for two to four weeks after birth, but at the end of that time it gains rapidly, never, however, quite attaining the normal amount. This sign occurs naturally only in the former of the two types of children.

The geographical tongue is a certain indication if present and is the only one of the symptoms which comes and goes independent of the intercurrent infection. Very interesting are the skin manifestations. The "cradle cap," a yellowish gray desquamation occurring in the scalp of infants in the region of the large fontanelle, is one of the first to make its appearance. Should the child be overfed, and especially if the food be rich in fats, this innocent desquamation very often becomes a marked seborrhea and only disappears with regulation of the diet or the course of time. Another symptom is that of milk eczema. This shows as a sharply-outlined erythema on the cheeks, usually extending well toward the ear and having on its surface fine silvery scales. If digestive errors such as those above mentioned are allowed we encounter here soon a facial eczema, which often does not confine itself to the cheeks but spreads to the forehead and sometimes the ears. Local applications have very little effect upon these conditions, but should the system of these infants be suddenly depleted by a severe diarrhea the skin eruption disappears, only to return with an increase in food. Czerny includes strophulus among the skin manifestations of the condition, but states that the degree of irritation depends not upon the kind or extent of the eruption but upon the nervous temperament of the child.

Another skin symptom is what, for want of a better term, may be called "intertrigo." This occurs most often behind the ears or under the arms. That occurring in the groin may be more severe in type in these cases, but is not regarded in itself as a symptom of the condition.

Of most interest to the general practitioner, however, are the respiratory symptoms. Before I enumerate these let me say that the chief characteristic of all of these is their frequent repetition and that Czerny does not regard the simple appearance of one of these without repetition as sufficient evidence of the exudative diathesis. In infants he mentions

first asthma. This he regards as an acute bronchitis, the severity of the asthmatic symptoms depending on the nervous irritability of the child.

But most striking of all is probably the opinion which he expresses in regard to lymphatic enlargement in the pharynx. These he regards as the result of repeated irritation due to recurrent infections of the mucous membrane and not as in themselves predisposing to infection. In other words, he regards the mucous membrane as the port of entry of the infection and the place where it primarily occurs, and holds the lymphoid tissue as only secondarily involved. Therefore, he does not advise the removal of the lymphoid tissue from the pharynx as a means of reducing infection, but only as necessary to take away a mechanical obstruction. Hence in only a few cases would he regard removal of the tonsils as of material benefit to these patients if proper hygienic and dietetic rules are not observed. In this way he accounts for the frequent failure of operations on adenoids or enlarged tonsils to produce the desired result, i. e., freedom from infection.

The enlarged cervical glands he attributes to repeated infections of the parts drained by these and the infection with tuberculosis as secondary, depending in the first place on the frequent irritations of the pharyngeal mucous membrane, and in the second on the lowering of the general resistance. Another respiratory symptom is pseudo-croup, a trouble which proverbially occurs in fat, apparently robust children.

Aside from the geographical tongue there are no symptoms which refer to the gastrointestinal tract. The fetor ex ore is the result of decomposition in the crypts of the tonsils, and the anorexia is dependent on the nervous condition of the child. In the eyes we meet with blepharitis and phlyctenules, and in the urogenital system vulvitis and balanitis.

The three principles of treatment are regulation of diet, avoidance of infection and training of the nervous system.

The first of these is best regarded under two heads: the diet of the first year and the diet after the first year.

During the first year we must *avoid overfeeding and keep the amount of fat in the food reduced to a minimum.* These children can take care of starch much earlier than the healthy child, and carbohydrates in reasonable amounts seem to benefit the condition. If a child is on the breast (a fat rich food) it should not be removed because of the immunity or increased resistance to infection conferred by the natural nourishment. After the first year the diet should be largely vegetarian. Milk should never be given in large quantities, no eggs, and rare meat only in small amounts.

To avoid infections, life in the open air is advisable. These children should always be away from adults who have repeated infections of the respiratory tract. Since the nervous system in children with the exudative diathesis is especially prone to be affected, they must have their minds removed as far as possible from their own complaints. The best way to attain this end is to require them to play with children not of their own family and to be away from the anxious solicitations of their elders. All drugs are worse than useless, for they do not build up the

resistance of the patient and by calling his attention to his disorder produce an undesired effect on the child's nervous system.

My personal experience is not so great that I can either affirm or deny all the statements made by Czerny in respect to the exudative diathesis. However, what I have seen has led me to believe that a thorough knowledge of his ideas on this subject is of inestimable value to the medical practitioner. It has been most valuable to me from the standpoint of infant feeding, and here at least my experience has tended to confirm the ideas of the author. As to the affections of the respiratory tract and especially of the lymphatic hyperplasias I can only say that to some the indiscriminate removal of tonsils and adenoids has seemed unnecessary, and that it is the general practitioner and not the specialist who sees the after-effects and whose opinion in this regard is the most valuable. Undoubtedly in a large percentage of cases the relief afforded by removal of the pharyngeal hyperplastic lymphatic tissue is not accompanied by the desired results, for we frequently see the rapid reappearance of the enlarged tonsil and no cessation in the repeated attacks of inflammation. If the hyperplastic lymphatic tissue were the portion of the pharynx which predisposed to infection, why would its removal not in every case bring about a freedom from attacks of pharyngitis? On the other hand, how do we know that many of these cases if subjected to a rigid hygienic and dietetic treatment would not get well without operation, and how many who are operated on owe their ultimate recovery rather to the physician's instructions as to hygiene than to his operative skill?

I fear that I have laid too much stress on this phase of the question to the detriment of the others. Allow me to repeat that to me the most important point brought out by Czerny is that in regard to the nourishment fitted to these children in the first and second year of life, since this is the one thing which affects vitally the very existence of the child.

The objection has been made that the conception of the exudative diathesis is too broad and too apt to be used as a "catch-all" to be really of practical value. This is only true if we regard it as a disease. If we once properly conceive of it as a condition and to the manifestations of its presence as the real disease, it ceases to be so complicated and proves of much value.

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ILLINOIS MEDICAL JOURNAL

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JUNE, 1908.

ENTERTAINMENT OF VISITORS TO THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT CHICAGO.

At the Peoria meeting the House of Delegates, on the recommendation of the Council, appropriated $1,000 for a headquarters to be maintained during the Chicago meeting of the American Medical Association. All members of the American Medical Association, and especially the Illinois members, will be welcomed at this headquarters, and it is expected that a buffet lunch or some such entertainment will be provided. This headquarters will probably be located in the Stratford Hotel. The committee having this in charge are ex-President Wm. L. Baum, Robert E. Preble and George Edwin Baxter of Chicago. Every member of our state society should make his first visit to this headquarters, register and secure a particular badge indicating that he belongs to the state in which this meeting is being held, and when thus designated should exert himself for the reception and entertainment of the visitors from other states.

THE PEORIA MEETING.

The annual session which has just closed at Peoria will go down in history as one of the most successful meetings of the society ever held. The weather was ideal and the entertainment provided was splendid. While the attendance was not as large as some other meetings, it was good and close attention was given to the scientific work of the society. Important matters were considered by the Council and House of Delegates, of which we will speak more fully in our next issue. The following officers were elected and committees appointed: President, James Wiley Pettit, Ottawa; first vice-president, James L. Wiggins, East St. Louis; second vice-president, E. M. Echard, Peoria; secretary, E. W. Weis, Ottawa; treasurer, E. J. Brown, Decatur. Section One, chairman, J. L. Miller, Chicago; secretary, C. A. Wells, Quincy. Section Two, chairman, D. N. Eisendrath, Chicago; secretary, H. N. Rafferty, Robinson. Committee on Public Policy, Robert E. Preble, Chicago; Carl E. Black, Jacksonville, and Wm. L. Baum, Chicago. Committee on Medical Education, Frank N. Norbury, Jacksonville; J. F. Percy, Galesburg, and C. L. Mix, Chicago. Committee on Medical Legislation, L. C. Taylor, Springfield; M. S. Marcy, Peoria, and J. V. Fowler, Chicago. Delegates to American Medical Association, E. W. Weis, Ottawa; R. T. Gillmore, Chicago; J. F. Percy, Galesburg, and L. A. Nickerson, Quincy; alternates, T. H. Renn, Chicago; W. B. Helm, Rockford; D. G. Smith, Elizabeth; William Parsons, Chicago; W. T. Robinson, Chicago Heights; T. J. Pitner, Jacksonville; L. C. Taylor, Springfield. Councilors, J. H. Stealy, Freeport; C. C. Hunt, Dixon; W. K. Newcomb, Champaign. Place of meeting, Quincy.

THE AMERICAN MEDICAL ASSOCIATION.

The Fifty-ninth Annual Session of the American Medical Association convenes in Chicago, June 2, 3, 4 and 5, 1908. Twenty-one years have elapsed since the State of Illinois has had the opportunity of welcoming this Association at the time of its annual meeting. That state, and city in particular, may congratulate itself for the opportunity of being host to such a gathering of medical men. That an organization of this character is not only national in its scope, but national in its influence, is self-evident. The good which results from such gatherings can be measured only by the limitations of the influence of the individual members who attend the session. The impetus and stimulus to great work in the community which is fortunate enough to entertain this body of men, can not be estimated. Not only is there great scientific value to the medical profession, but of equal importance is the benefit which obtains to each individual from intimate and personal contact with his fellow practitioners.

A program of rare attractions has been provided for this meeting. Representative men in the medical profession, not only in the United

States but from foreign countries, will be present and contribute from their knowledge for the benefit of their medical brethren and through them to the public. Preparations have been made by the committees for a great variety of entertainments. Social attractions, clinics, scientific exhibits, alumni reunions, and special entertainments for the wives and families of the attending members have been amply provided for. Our state society has generously contributed not only in funds but in individual and united effort on the part of the members to give a sincere welcome from the Illinois State Medical Society to all of the visitors. To those of our subscribers who are not members of the American Medical Association but who may desire to register at the Chicago meeting, we desire to call attention to the fact that they will be permitted to register, provided they have the proper credentials, and upon payment of the dues of the American Medical Association. The credentials necessary consist of a certificate showing that the physician is a member in good standing of the Illinois State Medical Society. These credentials should be presented at the Bureau of Registration, together with the sum of $5.00 for the annual dues, which likewise entitles him to *The Journal of the American Medical Association*. He is then given a badge which tenders him the privileges of the entire session. We again call attention to the headquarters of the Illinois State Medical Society, which will be open at Stratford Hotel, at which all members of our society are urged to register and receive their badge. Chicago may be rightly called the home of the American Medical Association. The permanent offices of *The Journal* and secretary are located in this city. THE ILLINOIS MEDICAL JOURNAL joins in extending a most hearty welcome to this organization in its home state.

Correspondence.

MORE ABOUT THE LINCOLN INSTITUTION BY A FORMER SUPERINTENDENT.

WILBUR HOME AND SCHOOL FOR BACKWARD AND DEFECTIVE CHILDREN. C. T. WILBUR, M.D., SUPT.

KALAMAZOO, MICH., April 25, 1908.

To the Editor:—I have read your editorial with interest. I think you presented the matter very fairly and about as it was. The institution, when I left it, was said by experts to be the best of its kind in the world; one renowned expert went all over the world, and said so. One of the many things that has militated against its progress, and has been instrumental in its degradation, has principally been the indifference of everybody to the elevation of the defective ones of this class and the political tendency of the times, especially in Illinois. The spoils system and the opportunity offered to governors like Altgeld, Tanner and Yates and such men, who look upon institutions as only places to put their friends or political workers, is responsible in a great measure for it, but the worst

feature of all is the tendency to create immense congregations of defectives under one management, so that individual cases are lost sight of and droves and herds of people are aggregated without any thought of benefit to be derived from such aggregation, only to relieve those who wish to be relieved of burdens, without much thought or care for the welfare of the defective, but only of the getting them together so they can be kept with as little expense as possible to the public. The system, too, is such that the money is grafted away to help politicians and others get away with the people's money. A man who attempts to save to the state money is looked upon with dislike, as it is deemed penuriousness, and liberality is a source of popularity.

The great trouble is, however, that all state institutions are too large. There is a limit to one man's capacity to manage such an establishment. One source of my unpopularity was my known determination to suppress any effort to enlarge the institution, and to have several organized in different portions of the state so they could accommodate the population of the different portions of the state where friends could look after them by visitation and know something about them without going such distances to visit them. Large institutions can not be properly managed and inmates can not be properly cared for in herds. Individual attention is what defectives require if they are to be benefited. My wife and I were interested in our work, and I gathered around me faithful teachers and caretakers who did do faithful service. Your editorial was very well and thoughtfully written and did justice to the subject so far as it went, but I suppose it never occurred to you that all institutions were altogether too large for faithful supervision. The average man is too lazy and incompetent to do his duty in such matters. At Lincoln a superintendent has hardly had time to learn anything about the business before he was bounced. Yours truly,

C. T. WILBUR.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The Adams County Medical Society met in regular monthly session Monday, May 11, in the Elks' club rooms, with the newly elected president, Dr. J. B. Shawgo, in the chair, and an attendance of 25 physicians. The committee on the revision of the constitution and by-laws to make them correspond to that of the State Association made their report and the adoption of the by-laws followed. It was voted to place in the hands of each member a copy of the "Principles of Ethics." The president announced the committees for the current year: Program and Scientific Work, Drs. C. A. Wells, Henry Hart, and Charles E. Ericson; Public Health and Legislation, Drs. E. B. Montgomery, Otis Johnston, and J. H. Rice; Social Entertainments and Refreshments, Drs. D. M. Knapp, J. A. Koch, and W. W. Williams; Library Committee and trustees elected by the society, Drs. F. M. Pendleton, L. B. Ashton, Kirk Shawgo. Jefferson H. Heitman, of Tioga, and Christian C. Haxel, of Fowler, were elected to membership. The applications of Dr. Joseph H. Bloomer, city, and Dr. J. B. Ross, LaPrairie, Ill., were received and referred to censors. The most important action of the society was the decision to enter into a contract with Dr. Carl E. Black and the Morgan County Medical Society to furnish and index a splendid list of current medical publications. Twenty-three of the physicians had luncheon together at Hotel Newcomb. In the afternoon, Dr. W. W. Williams, Quincy, gave an able paper on the subject, Carcinoma of the Stomach, outlining the surgical treatment of the same, and presenting a splendid chart of the differential diagnosis of the same. The paper was quite generally discussed and appreciated by the society.

CLARENCE A. WELLS, Secretary.

BELLEVILLE MEDICAL ASSOCIATION.

The Belleville Medical Association was resuscitated April 14, 1908, after a sleep of some two years. Dr. Gunn, the president, conceived the idea of trying to revive it, and, knowing the well-established fact that to reach a man the stomach route is usually the best, got a few members together at a special meeting and passed a resolution for a reunion at a banquet. The following members were present: B. E. Twitchell, J. W. Twitchell, George Hilgard, A. M. Scheel, Hugo E. Wangelin, C. H. Starkel, A. L. Reuss, Charles P. Renner, A. B. Gunn, Ed M. Irwin, C. G. Rayhill, W. West, H. G. Hertel, C. R. Huggins, E. P. Raab, J. G. Massie, Hy. Reiss and F. E. Auten. The absentees were due to illness. An enjoyable evening was spent and enthusiasm prevailed. While at the banquet table the president asked for suggestions from the members relative to the best interest of the society. Every member was called upon individually for his opinion. They all responded, and the suggestion of postgraduate work at stated meetings seemed to prevail, and hereafter such work is to be carried out. Among other suggestions was one by Dr. Starkel, "that the subject of tuberculosis and the feasibility of establishing a sanitarium for its treatment be taken up." Bellville being very fortunate in having an excellent and beautiful hospital which, with little effort, could be converted into the proposed sanitarium. The doctor had a conference with the mayor, who had pledged him his support for the movement. A special committee, consisting of Drs. Starkel, Gunn, Irwin, Auten, Reiss, Raab, Hilgard and Twitchell, was appointed to take up the matter and push it through. Belleville, through the efforts of its medical association, will surely in the future have a sanitarium for the treatment and prevention of tuberculosis as good as can be found in the state. It thereby will aid and do its share to stamp out the "white plague." After a vote of thanks to the president, the association adjourned, all the members expressing themselves of having a most enjoyable and profitable evening.

BRAINERD DISTRICT MEDICAL SOCIETY.

The thirty-second annual meeting of this society was held at Lincoln, April 30, 1908. Four new members were elected, viz.: C. O. Burke, Atlanta; O. G. Nuehlmann, Pekin; C. B. Caldwell, Lincoln; C. J. F. Rochow, Lincoln. The election resulted as follows: President, J. M. Wilcox, Clinton; first vice-president, Don W. Deal, Springfield; second vice-president, J. W. Bozarth, Mt. Pulaski; third vice-president, C. W. Cargill, Mason City; secretary, H. S. Oyler, Lincoln; treasurer, C. C. Reed, Lincoln; board of censors, Irving Newcomer, Petersburg, B. W. Hole, Springfield, and C. M. Noble, Bloomington. The next meeting will be held in Clinton. Papers were read as follows: Differential Diagnosis of Renal Hemorrhage, with Report of Case and Treatment, Dr. S. E. Munson, Springfield; Suggestive Therapeutics, Dr. T. D. Cantrall, Bloomington; Improved Technic for Correcting Malposition of the Uterus, Dr. D. W. Deal, Springfield; Lessons from Eight Fatal Cases of Labor, Dr. A. G. Campbell, Clinton.

CARROLL COUNTY.

The Carroll County Medical Society met at Mt. Carroll and the members listened to an interesting program, which included papers as follows, the report being made by Dr. H. S. Metcalf, secretary: Dr. G. W. Johnson, of Savanna, read a paper, taking for his subject Dr. Oliver Wendell Holmes, who was Dr. Johnson's old teacher at Harvard. It was in part as follows:

DR. OLIVER WENDELL HOLMES.

G. W. Johnson, M.D., Savanna, Ill.

Dr. Oliver Wendell Holmes, son of Rev. Abiel Holmes, was born Aug. 29, 1809, in a house which once stood on Cambridge Common, Mass., where preceding generations of the family had lived before, and during revolutionary times, and his ancestral tree shows such noble strains that there is little wonder at the production of the brilliant and talented subject of our sketch. The original Holmes, the great-grandfather of the professor, was John Holmes, who joined a colony and settled in Woodstock, Conn., in 1686; his grandfather was a physician who served as surgeon in the revolutionary army.

Professor Holmes evidently took great pride in his ancestry, as in his *Autocrat* he says: "I go for the man with the family portraits against the one with the 25-cent daguerreotype, unless I find out that the last is the better of the two; I go for the man that inherits family traditions and the cumulative humanities of at least four or five generations; above all things, as a child he should have tumbled about in a library; all men are afraid of books who have not handled them from infancy."

Graduating from Harvard College in 1829, he studied law one year, after which he decided to take up the study of medicine. After six years, part of which time was spent in hospitals in Paris and Edinburgh, he took his degree in medicine from Harvard in 1836. In 1839 he was appointed professor of anatomy and physiology in Dartmouth College, which he resigned in 1847 to take the same chair in his alma mater, filling the same continuously until 1882, when he gave up his professional work and was made emeritus professor and gave his attention wholly to literary work.

Dr. Holmes' personality was by no means commanding; of stature below the average he always impressed me with the idea of unusual preponderance of weight below; head not above the average in size, narrow and sloping shoulders, body somewhat spare, and from the large size of the pantaloons then in style, and rather oversized feet, would almost suggest that the big end of the man was down. It always appeared to me, too, that he was not thoroughly in sympathy with his subject, anatomy, and really it seemed illy fit for such a man as he to demonstrate the repulsive cadaver before him, and as a teacher of anatomy I never considered him the equal of others I might name, and think he realized as much himself. In speaking of the teaching of practical anatomy, I remember he at one time made reference to the superior ability of Professor Ford, then hold-

ing the same chair in the University of Michigan, and said of him: "Whoever sits under the teaching of Corydon L. Ford and fails to learn anatomy, his head sneds knowledge as an india rubber coat sheds rain."

He was always welcomed at his lectures with enthusiastic cheers and we always hoped and expected that he would wander occasionally from the prosy subject before him, and ramble off at a tangent in witty anecdote, humorous or pathetic recital, which would hold the class spellbound, and during such times his face would assume a happy, almost illumined expression, and his beautifully chosen sentences flow so rapidly that such deviations from the subject were always hailed with delight by all. In describing the bones of the skull he asked why it was called the temporal bone, because the first gray hairs are usually found about the temple, indicating age, time, tempus, temporal. For the cupped depression in the wrist alongside the tendon of the extensor longus pollicis he had a name I can not now recall, but it was Greek or Latin for snuffbox, so named because snuff-taking medical students whose hands were soiled were in the habit of shaking some snuff into this little depression and snuffing it thus.

When Morton gave his first real demonstration of the effects of the inhalation of ether in the fall of 1846, Professor Holmes was among those present, and then and there coined the new word, "anesthesia," to describe the condition resulting from its use, a name and condition three years younger than I.

I will quote a few lines from his medical teaching: "There is one part of their business that certain medical practitioners are too apt to forget, viz.: that what they most of all should try to do is to ward off disease, to alleviate suffering, to preserve life, or at least to prolong it if possible. It is not of the slightest interest to the patient to know whether there are three or three and a quarter inches of his lungs hepatized; his mind is not occupied with thinking of the curious problems which are to be solved by his own autopsy, whether this or that strand of the spinal marrow is the seat of this or that form of degeneration; he wants something to relieve his pain, to mitigate the anguish of his dyspnea, to bring back motion and sensibility to the dead limb, to still the tortures of neuralgia. An old woman who knows how to make a poultice and how to apply it, and does it just when and where it is wanted, is better—a thousand times better in many cases—than a staring pathologist who explores and thumps, and doubts and guesses, and tells his patient he will be better to-morrow, and so goes home to tumble over his books and make out a diagnosis." "What is the honest truth, by far the largest number of diseases which physicians are called upon to treat will get well at any rate, even in spite of reasonably bad treatment; of the other fraction, a certain number will inevitably die, whatever is done, there remains a small margin of cases where the life of the patient depends upon the skill of the physician. Drugs now and then save life, they shorten diseases and relieve symptoms, but they are second in importance to food, air, temperature, and the other hygienic influences. Sensible men in all ages have trusted most to Nature."

But well known as Holmes was in the medical profession, it is in his literary productions that lasting fame will long endure. There are few authors whose books have so fascinating interest, whose descriptive faculties have been so exact, and whose comparisons so apt. Some have criticized his writings, because he adopts so many phrases and terms borrowed from his medical lore, but to physicians especially such allusions are always recognized as peculiarly apt and ingenuous. On taking leave of his chair in Harvard in 1882, as he entered the anatomical room, one of his class come forward and presented him with a loving cup, on one side of which was engraven the happy quotation from his own writings: "Love bless thee, joy crown thee, God bless thy career." So deeply affected was he by this unexpected tribute of affection that, overcome, it made him speechless, but he afterward assured them his trouble was aphasia, not acardia; his heart was right, but his tongue forgot its office.

At the Holmes breakfast, given him by the publishers of the *Atlantic Monthly* on the 29th day of August, 1879, in commemoration of his seventieth birthday, James T. Fields submitted the following fairy tale: "Once upon a

time a company of good-natured fairies assembled for a summer moonlight dance on a green lawn in front of a certain picturesque old house in Cambridge. They had come out for a midnight lark, and as their twinkling feet flew about among the musical dewdrops, they were suddenly interrupted by the well-known figure of the village doctor, which, emerging from the old mansion, rapidly made its way homeward.

"Another new mortal has alighted on our happy planet," whispered a fairy gossip to her near companion.

"Evidently so," replied the tiny creature, smiling good naturedly on the Doctor's footprints in the grass.

"That is the minister's house," said another small personage, with a wink of satisfaction.

"Perhaps it is a boy," ejaculated fairy No. 1.

"I know it is a boy," said fairy No. 2. "I read it in the Doctor's face when the moon lighted up his countenance as he shut the door so softly behind him."

"It is a boy!" responded the fairy queen, who always knew everything, and that settled the question.

"If that is the case," cried all the fairies at once, "let us try what magic still remains to us in this busy, bustling New England; let us make that child's life a happy and famous one if we can."

"Agreed," replied the queen, "and I will lead off with a substantial gift to the little new comer. I will crown him with cheerfulness, a sunny temperament, brimming over with mirth and happiness."

"And I will send your Majesty's gift to the little man," said a sweet-voiced creature, "and tender him the ever-abiding gift of song. He shall be a perpetual minstrel to gladden the hearts of all his fellow mortals."

"And I," said another, "will shower upon him the subtile power of Pathos and Romance, and he shall take unto himself the spell of a sorcerer whenever he chooses to scatter abroad his wise and beautiful fancies."

"And I," said a very astute-looking fairy, "will touch his lips with Persuasion; he shall be a teacher of knowledge, and the divine gift of eloquence shall be at his command, to uplift and instruct the people."

"And I," said a quaint, energetic little body, "will endow him with a passionate desire to help forward the less favored sons and daughters of earth, who are struggling for recognition and success in their various avocations."

"And I," said a motherly-looking, amiable fairy, "will see in due time that he finds the best among women for his companionship, a helpmeet indeed, whose life shall be happily bound up in his life."

"Do give me a chance," cried a beautiful young fairy, "and I will answer for his children that they may be worthy of their father, and all a mother's heart may pray that Heaven will vouchsafe to her."

And after seventy years have rolled away into space the same fairies assembled on the same lawn at the same season of the year to compare notes with reference to their now famous protege. And they declared that their magic had been thoroughly successful, and that their charms had all worked without a single flaw.

Those who have not read his books, more especially "The Autocrat of the Breakfast Table," "The Professor at the Breakfast Table," "Elsie Venner," "The Guardian Angel," and many others both in prose and rhyme, have certainly missed some rare intellectual treats.

If this paper is not too long I beg to give some few selections more especially from "The Professor at the Breakfast Table." It is difficult to make selections, as one needs to have acquaintance with the context to understand just how his moralizings come in and fully appreciate them. I shall not attempt any of his poems. Doubtless all remember the logic of his "One Hoss Shay," "Old Ironsides," which thrilled us in our boyhood days, the exquisite beauty of the "Chambered Nautilus," which he considered his best poem, and score of others. —[Autocrat, pp. 162-193.]

His death occurred Oct. 7, 1894, two months after he had expressed himself as "being 85 years young." He had for some time been troubled with asthma, probably of cardiac origin, but was only confined to his home but a few days before the end. Painlessly and peacefully, with all the dear ones of his family about him, his life flowed away like the ebbing of a tide. His life nearly spanned the nineteenth century, with the advancement of which he kept fully abreast, and he was laid to rest at Mt. Auburn beside his wife among the elms he loved so well.

Dr. C. W. McPherson's paper on Pneumonia awakened much interest and some discussion.

PNEUMONIA.

C. W. McPherson, M.D., Hazelhurst, Ill.

Pneumonia is an acute general infectious disease, with toxemia and exudate in the alveola. Etiology: It is the most widespread and the most fatal of all acute diseases, with the exception of consumption. Observed in all ages. Of the predisposing causes, age ranks first. Cold has little or no influence on it, as it is unknown in the polar regions, common in the warmer climates or it increases from pole to equator.

Symptoms.—The disease sets in abruptly, as a rule, with a chill lasting from a few minutes to three hours. Fever has already begun, and on examination you will find all the physical signs of a full-fledged case of pneumonia.

Complications.—Pneumonia has very few complications compared with other diseases and fewer sequelæ. Pleurisy is invariably present when the disease comes to the surface, and I would not call it a complication unless there is an exudate and effusion. I do not believe that pneumonia relapses, but is a case of delayed resolution.

Diagnosis.—A well-developed case of pneumonia is easily diagnosed, but if latent or centrally located no man can diagnose the disease until the physical signs show themselves. We have pneumonia without chill, cough, pain, fever or expectoration. Never say to a man over 60 that he has not pneumonia, as he may fool you. We are never threatened with pneumonia, as many physicians say, as it comes without warning. When we have pneumonia of one lung and pleuritic effusion of the other we wonder what is the matter. Latent pneumonia is often taken for meningitis and typhoid fever, but we must rely upon our physical findings.

Prognosis.—It is the most fatal of all acute diseases and a close second to tuberculosis. Infancy and old age the mortality is the greatest. The amount of lung involved has nothing to do with the symptoms; it has with the recovery. One-half of all complicated cases die. Pneumonia of the apex is more fatal than basic. Migratory pneumonia is generally fatal. The so-called one-day and abortive pneumonia are unknown, as the physical findings are absent. Some bad points: Delirium after the fifth day; rise of temperature after the fourth day; prune juice expectoration; absence of expectoration; exhaustion, with a sunken, pallid face and cold sweats; diarrhea and edema.

Treatment.—Pneumonia is a self-limited general disease, runs its course and can not be aborted or cut short by any known means at our command. The pneumonic lung needs no treatment, it is a general disease, and has a local lesion. The toxemia is what we have to deal with and not the lung. There is no known specific for pneumonia, as we so often hear of. Uncomplicated cases of certain ages will recover. Complicated cases of certain ages will prove fatal. Pneumonia of itself never kills; it is its complications. Pneumonia is a painless disease. I try to have carried out the same general management of my pneumonia patients that I do in typhoid fever.

Veratrum, aconite, antimony, gelsemium, belladonna, iodid of potassium, have long been discarded. I admit that they lower the pulse and temperature for the time, but you do it at the expense of your patient later on. Coal-tar preparations, antipyretics and cough mixtures have no place here; am sorry to say for the toxemia we have no remedy. Nitroglycerin is too short in its action. Oxygen gas is of little or no good, as the alveola are plugged up with an exudate. If

the patient is suffering pain give ¼ gr. of morphin hypodermically and it rarely has to be repeated. For heart weakness I rely upon the use of camphor, spirits ammonia and strychnin. Alcohol I seldom use. Locally, cold sponging; there is nothing equal to it. It is grateful to the patient, reduces temperature and relieves pain. The cold pack I am opposed to; it will lessen the fever, but it causes depression and hastens heart failure. I find one of the best things to do in pneumonia is to employ a competent nurse and throw physics to the dogs.

Following are extracts from a paper on Diphtheria, Then and Now, by Dr. F. E. Mulugin, of Thomson:

When I received notice from our worthy secretary, Dr. H. S. Metcalf, that I was placed upon the program for a paper on the subject, "Diphtheria, Then and Now," I felt that a mistake had been made in some manner, for of all who are practicing in the country at the present time I think my own personal experience has been the most limited, for I can readily, after a practice extending over nearly thirty years, recount every case that I ever had and tell you how I treated them. Before doing so I want to give you a few brief extracts from different authorities. In Cullen's Practice, published in 1805, we find that at that time he speaks of cynanche maligna as a contagious disease, seldom sporadic and commonly epidemic. Attacks persons of all ages, but more commonly those in a young and infant state. Then giving history and prognosis. Treatment at that time, which was what we would to-day call cruel and inhuman. He passed along to 1826, when Bretonnean, of St. Louis, in his work, seemed to differentiate between the cynanche maligna, cynanche trachlearis, and the different conditions and pointed out true pathology in his latest memoirs in 1855, substituting the name diphtheria for diphtheriti.

Diphtheria was a word almost unknown in English medical literature till 1859. Here the Doctor gave the symptoms, etc., as understood then. Then, giving briefly his own personal experiences, he passed to the new era which dawned upon the medical world when antitoxin came into general use, and stated that in his hands he had always obtained good results, only when cases were seen very late in the disease, and then they were mitigated greatly in the majority of the cases.

The meeting adjourned to meet in Chadwick in May.

H. S. METCALF, Secretary.

CENTRAL ILLINOIS DISTRICT MEDICAL SOCIETY.

The thirty-fourth annual meeting was held Tuesday, April 28, at Pana. A large number was in attendance and the following program was read: Scrotal Tumors, Dr. Will C. Wood, Decatur; Eye Defects Seen and Unseen, Dr. D. D. Barr, Taylorville; Surgical Treatment of Cerebrospinal Meningitis, Dr. G. N. Kreider, Springfield; Improved Technics for Correcting Malpositions of the Uterus, Dr. D. W. Deal, Springfield; Generalization vs. Specialization in Medicine, Dr. J. N. Nelms, Taylorville. Election of officers resulted as follows: President, Dr. W. C. Wood, Decatur; vice-president, Dr. D. W. Deal, Springfield; treasurer, Dr. J. N. Nelms, Taylorville; secretary, Dr. R. C. Danford, Pana. The entire board of censors was re-elected.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

A regular meeting was held Feb. 26, 1908, with the President, Dr. Henry B. Favill, in the Chair. Papers were read as follows: 1. Opsonins and Vaccines in Tuberculosis, by Dr. Gerald B. Webb, of Colorado Springs, Colo. 2. The Present Status of Treatment of Tuberculosis in Illinois, by Dr. J. W. Pettit, of Ottawa, Ill. 3. Preliminary Report of the Value of the Ophthalmic Reaction for Tuberculosis, by Dr. Frederick B. Tice. These three papers were discussed by Drs. Arnold C. Klebs, Mary C. Lincoln, Ludvig Hektoen, Adolph Gehrmann, William J. Butler, John C. Hollister, George F. Suker, Ethan A. Gray, Frank S. Johnson, Clarence L. Wheaton, and, in closing, by Drs. Pettit, Webb and Tice.

DISCUSSION ON THE PAPERS OF DRS. WEBB,* PETTIT,* AND TICE.

Dr. Arnold C. Klebs:—As we have had three distinct phases of one subject in these three papers this evening, I am really at a loss to know where to begin. But I should like to have a broad explanation of one phase of the subject as given by Dr. Pettit in his paper on sanatoria. I am sorry that I came in late and did not hear all of his paper, although I heard a good deal of it, and that part which interested me particularly was the statement made by him that the principles of treatment of tuberculosis were well settled. After listening to the other papers, and particularly to the paper by Dr. Webb, this question does not seem so well settled, at least not by the sanatorium methods.

I am very glad to see that Dr. Pettit, who naturally is a very ardent advocate of the sanatorium treatment, is cautious in advocating the erection of state sanatoria. I believe that caution should be urged more and more. I had occasion two years ago in St. Paul to call attention to some statistics which have been brought forward by the German sanatoria especially, which have done more work on the subject of tuberculosis than any other country; I showed that those statistics are not so gratifying as seemed at first. The curative results at dismissal of patients up to 90 per cent. became very much lower after several years, that is, the patients relapsed very frequently upon return to home surroundings. That feature has to be borne in mind particularly in the treatment of tuberculosis of the masses. Sanatoria may be of great value to those who can afford to go to them, and those states that can not afford to build and maintain large institutions for this purpose would often do much better if they concentrated their efforts in other directions, for instance, in the way it has been done in this city, namely, in the erection of dispensaries and the home care of patients, looking particularly toward prevention within the families of consumptives.

One thing in Dr. Webb's paper which has interested me most is to see how an extremely busy practitioner, in a comparatively small country town resort, has been capable of doing an enormous amount of opsonic work. Most of us have been scared of opsonic work on account of its great complexity; yet he has been able not only to work out all of his cases in that way, but he has been able to develop scientifically opsonic technic to a very great extent, as the report which he has given us of some of his findings easily shows. His findings, if corroborated, will throw an entirely new light on opsonic therapy. His discovery of the non-acid fast bacilli in their application to opsonic determinations will change the indices considerably, and if they change them in the way indicated it may explain many of the discrepancies that have been observed in this country. That such work is possible in the practice of a general practitioner seems to me an indication of encouragement for those of us who have hesitated to take it up.

Speaking of the non-acid fast bacilli, I would urge Dr. Webb, if he speaks of them in any of his publications, not to mention the name of Dr. Michaelidès as the one who discovered them. I happened to have been in Professor Behring's laboratory last summer and had occasion to see this work done there. It was the first assistant of Behring, Dr. Much, who first did this work on non-acid fast bodies, his report of the findings having been published. My father, Edwin Klebs, in 1904 and early in 1907, had previously described them. This merely as an historical correction.

I hope we will hear more about this work of Dr. Webb in regard to the non-acid fast bacilli; it will undoubtedly be of great interest.

Another point which interested me particularly was the fact that altitudes and other climatic conditions, but more particularly high altitude, did not affect the opsonic index. The observed increase of agglutinating power in high altitudes would have made it probable that the opsonic index would be also increased. I was wondering whether the method of transportation of the blood might not have had some effect in modifying the test, and if different results would not have been obtained if the determinations had been made on Pike's Peak.

Another thing that interested me very much was to find that Dr. Webb is using gradually increasing doses of tuberculin in the treatment of pulmonary

* For text of papers see pp. 607 and 619.

tuberculosis. As I understand it, Wright considers this unnecessary, insisting on giving the same dose at long intervals.

Dr. Webb has made a brief reference to individual tuberculin. I think that is a subject which is coming to be more important of late. I wonder if he can tell us something of the work that has been done in Edinburgh with inoculations of cheesy matter for the purpose of immunization guided by opsonic determination.

I was particularly interested in the paper of Dr. Tice on the ophthalmic reaction. I have been trying to keep track of the literature, although I have found it somewhat difficult, more than 50 monographs on the subject having appeared since the 15th of last May, when von Pirquet first reported on the subject. About a week ago I received the monograph of Wolff-Eisner of more than 200 pages. The monograph is beautifully illustrated and shows Yankee enterprise in the Germans.

I regret that Dr. Tice did not adopt the method of classifying his cases as to clinical tuberculosis, clinically suspected cases of tuberculosis, and those apparently free from tuberculosis, as has been done by most of the other reporters. This would have allowed ready comparison. What I have noticed particularly in this paper again, as well as in some other papers, is that there is no uniformity in the technic of the test. First of all, the preparations used have been different. The preparation used by the speaker here is, I believe, absolutely different from the preparation used abroad. As I understand it, this tuberculin is precipitated by alcohol; the precipitate is dried and made into a tablet, with some admixture. It is utterly inconceivable how we can get a sterile solution with this unless we boil it again. Smithies and Walker, of Ann Arbor, found that the tuberculin in tablet form contained tubercle bacilli, which is rather astonishing. I should think by that it would seem that the manufacturers prepare their tuberculin by filtration through filter paper only, instead of filtering through a Chamberland filter. I do not know if Dr. Tice has noticed this also. Personally, I should not be inclined to use that preparation, nor should I want to recommend it for general use, because it will certainly not give uniform results, possibly lead to infections. The whole test is suffering from over-exploitation, anyway, and preparations of this kind are apt to discredit it. I know of another preparation which is being prepared in this country, put up in capillary tubes, which can be expelled by a rubber ball which is put in the capsule. This preparation is much more reliable because it is sterile and there is very little difficulty in applying it to the conjunctiva. In this connection I should like to say that it seems to me this test is being erroneously called ophthalmic reaction; neither is it correct to call it the Calmette reaction, and I think the term conjunctival reaction as suggested is preferable.

Very interesting to me was that the six cases of typhoid fever reported by Dr. Tice reacted negatively. Cohn, in Berlin, has found several cases reacting positively. I was interested to hear from Dr. Webb, who reported to me his own case of a very violent reaction without there being any suspicion of the presence of tuberculosis. But a month previously to making this test Dr. Webb immunized himself against typhoid fever, and it is quite possible that this may have a bearing on the point that the reaction was an extremely violent one. He used Calmette's preparation of 1 per cent., two drops, which is more than is recommended. I do not think Dr. Tice told us whether in his cases he used one instillation or two instillations, and whether he made the first instillation in one eye and then the second in the other eye. That is of great importance. If we instil one eye and subsequently instil the same eye, we often get reactions in healthy individuals. There seems to be a local hypersensibility produced by the first inoculation, and I believe in those cases every time the other eye ought to be used, if it is at all found necessary to use a second instillation. What we will have to determine in a large number of cases is a proper initial dose, and use one instillation only, avoiding entirely a second instillation, until this subject has been better cleared up. I wish Dr. Tice had given us his explanation of the reaction. He says that Wolff-Eisner does not give any explanation with regard to the production of the reaction. We have just been going over his explanation,

which covers about five pages, and it is quite interesting and I would recommend you to read it.

Addition After Correction.—In the discussion of specific points of the papers, I omitted reference to my opinion on the value of the integumental tests, which might be of interest. From my experience it seems to me that both the conjunctival and the cutaneous reactions have distinct corroborative value in diagnosis, but do not give any information about the extent of the lesion, but only of the specific reactive power of the organism. It is possible, therefore, that from it valuable prognostic conclusions are permissible. For both tests I would recommend simple solutions of old tuberculin and altogether discourage the use of the eye test in children, in whom better results are obtainable by the cutaneous test (25 per cent. tuberculin).

Dr. Mary C. Lincoln:—I should like to add to Dr. Tice's paper a brief report of my results with tuberculin used as a diagnostic means in the conjunctival and the Pirquet skin vaccination tests. It so happens that Dr. Tice has made his tests of cases in the two institutions in which I have been doing similar work, namely, at the Cook County Hospital and at Dunning. I have made tests upon 200 cases. Of these, about 90 were cases of bone and joint tuberculosis among children and adults, 90 cases of pulmonary tuberculosis, most of these being far advanced, and about 30 children clinically non-tubercular.

As to the results, my percentage does not agree entirely with that of Dr. Tice. I would divide my cases into those of bone and joint tuberculosis in which I have had a much higher percentage of positive results, ranging from 80 to 85 per cent., and cases of advanced pulmonary tuberculosis, in which I have found the percentage to be from 35 to 40, and even in the moribund cases to be, much to my surprise, 35 per cent. At the same time that I made the conjunctival tests I made the Pirquet skin vaccination test and, so far as possible, determined from two to five opsonic indices. The percentage of positive results of the skin vaccination test are essentially the same as that of the conjunctival test, but slightly lower, that is, 74 per cent. in the cases of bone and joint tuberculosis, and 35 per cent. in cases of advanced pulmonary tuberculosis. The reaction to tuberculin in the bone and joint tuberculosis cases is quite typical in both the conjunctival test and the Pirquet's skin vaccination. This can not be said in my experience of the pulmonary tuberculosis cases, especially the moribund ones. There the reaction is decidedly positive, but not nearly as typical as in surgical tuberculosis.

As to the question of using a single instillation or repeated instillations, I think it very important. I believe that point will explain some of our discrepancies in results. I agree with Dr. Klebs, that, to have the test valuable, we should have a solution of tuberculin of some strength which will give a result from a single instillation. That brings up the point of the material to use. I have also used the tablets manufactured by Parke, Davis & Co., of purified tuberculin. It has been interesting to compare the results of the Germans and French. Although the Germans have used the old tuberculin of different strengths, 1 and 2 per cent., their results seem to agree fairly well with those who have used the purified tuberculin. And the Germans have used not only the single instillation, but more than one instillation, and have recorded their results, not always stating whether they used a single or a second instillation. To me their percentage of positive results would be lower if they gave all their results on the basis of a single instillation.

Levy has been conducting an interesting series of experiments. He has taken both normal individuals and tubercular and has instilled one drop of a 2 per cent. solution of tuberculin in one eye, waited a period of a week or more, and then instilled into the other eye one drop of a 4 per cent. solution, and at the same time one drop of a 2 per cent. solution in the eye previously tested. He found the reaction positive in a large per cent. of cases in the eye in which there had been two instillations and negative in the eye in which the stronger solution was used, showing that the susceptibility to the reaction had been increased. The same strength solutions were used in both eyes, but a period of one week was

allowed to elapse between the two instillations in one eye. The prognosis, conclusions which the German authors are drawing, is to me unwarranted. In general, we can say, the far advanced cases do not give as marked a reaction as do those less profoundly infected.

Dr. Ludvig Hektoen:—There are many points, more particularly of a technical nature, to which reference might be made in view of the interest in opsonic work. I wish to make special reference to only one of these points, and that is to the agglutination of the corpuscles of one individual by the serum of some other individual. When that happens in opsonic studies it is very annoying, and we can have no real confidence in the results then obtained when the red corpuscles, as well as leucocytes are all more or less drawn together in dense clumps. When the sera of a number of persons are tested interchangeably upon the corpuscles of those persons, the persons become divisible roughly into two major groups: one whose corpuscles are not agglutinated, whereas their sera agglutinate the corpuscles of the other group; in Group 2 we have the reverse of this: The corpuscles are agglutinated by the sera of Group 1, while sera do not agglutinate the corpuscles of Group 1. A little less than one-half of ordinary normal persons, as they come and go, will be found to have non-agglutinable corpuscles, and in regular opsonic work such persons should be selected as donors of the blood-cream.

It is interesting and important at this time that we have men like Dr. Webb who are using tuberculin in pulmonary tuberculosis in connection with opsonic observations. Results will come from that which will prove of value for comparison, particularly as we have, on the other hand, men like Trudeau and others who for years have been using and still are using tuberculin in pulmonary tuberculosis and without regular opsonic observations. Dr. Webb, as I understood him, does not regard opsonic determinations as essential in tuberculin treatment, and in this I quite agree with him. I hope, therefore, that the fact that Dr. Webb is making a scientific study of the opsonic index in the course of treatment of pulmonary tuberculosis with tuberculin in no wise will deter physicians from making use of tuberculin in suitable cases and in such doses as cause no clinical reactions. Pulmonary tuberculosis should be treated more extensively than heretofore with tuberculin under proper conditions and following certain rules which we now may regard as well established by the pioneers in this work, especially Trudeau. Tuberculin undoubtedly has beneficial effect upon tuberculosis; furthermore, it can be given in cases that do not have special climatic and sanatorium advantages.

Dr. Adolph Gehrmann:—I would like to say a word on one phase of this subject, namely, that relating to the staining of the tubercle bacillus. It has long been known, as has been mentioned, that we find bacilli that are non-acid fast. This is true of those bacilli which have been macerated for a considerable length of time in glands where caseous material is present. This is especially true in cattle. We find in the old glands in the cow difficulty in finding tubercle bacilli by the ordinary methods; I wish to call attention to the possibility, in examination of the sputum for tubercle bacilli, of finding non-acid fast bacilli that are possibly streptothrix organisms, or diphtheria bacilli, which may be present in the sputum and which would give positive Gram staining. It might be well in these cases to use cultural methods where such organisms are found, and I believe it would be interesting for the doctor, if he knows of such a case, to use such methods and to determine further by animal experimentation whether he is dealing with the tubercle bacillus or some streptothrix organism. As a rule, we do not find non-staining tubercle bacilli in areas like the lungs where there is an active process. In the tonsil, however, where the crypts are filled, one might find such organisms present which have undergone degenerative changes, as well as other similar organisms.

Dr. William J. Butler:—With reference to the question of staining tubercle bacilli, it is of considerable interest in connection with opsonic work. Staining tubercle bacilli by other methods than by the carbol-fuchsin invariably gives

some difference in the results as to index. Staining with carbol-thionin will give usually a somewhat different result to that obtained by carbol-fuchsin in similar preparations. While it is an exceedingly interesting observation, the difference, noticed by the essayist, as between carbol-fuchsin and Gram's stain, and the range of error possible in counting the bacilli in general, would rather cause us to hesitate in attributing to the former point any great value at this time in explaining the anomalies in the tubercular index curve.

As to the response to vaccine injections, I think if the index is of value at any time in the treatment of tuberculin it is estimating the dosage by virtue of the index. It is true that occasionally a case will improve decidedly under treatment that shows little variation in the index. But that is not the rule, however; it is rather the exception. The various explanations offered for it are not altogether satisfactory.

With reference to the gonococcus, I have had considerable to do of late with it, and similar differences in the index may be observed with the gonococcus in staining by carbol-thionin and in staining by methylene blue. The indices will not be absolutely identical on staining similar preparations by different stains; and likewise I have observed that cases giving the most beautiful indices, that is, as to their rise and fall following injections of the gonococcus in apparently pure gonococcus infections, do not always show the best clinical results. But they are the exception.

As to the index in pulmonary tuberculosis, while I have not had much to do in treating pulmonary tuberculosis, and I note that Wright is not an enthusiast on the subject, I can readily see how in pulmonary tuberculosis, if there are autoinoculations occurring (and a few unvarying indices taken before starting treatment by no means excludes their subsequent occurrence), injections of tuberculin might cause an erratic index which would not correspond to one in which the patient was not suffering from autoinoculations.

As to the Calmette reaction, I have been investigating the conjunctival and skin reactions for several months, and, while not prepared to offer statistics, I believe my results would correspond more closely to those presented by Dr. Lincoln than by the essayist, which would likewise correspond, in a great measure, to those that have been presented in the literature.

The essayist seems to have lost sight of the fact that this is a test of the changed reaction capacity of the body toward tubercle bacilli and their products. It is only after a body has suffered invasion from tubercle bacilli that it will give evidence of this changed reaction. It is positive evidence of a local hypersensitiveness of tissue cells that have already been engaged in antibody production against tubercle bacilli products. If this immunizing reaction has been exhausted, it is evident that the reaction would be negative, and this might prove of some prognostic value, instead of lessening its diagnostic worth when positive. Therefore, the failure of this reaction in manifest tuberculosis should not be so hurriedly seized upon as an argument against its value in diagnosis, but should be regarded as an index to their immunizing response to the infection, hence of prognostic value in its failure.

It is likewise inconsistent to introduce as an argument against it the fact that the cases cited with other diseases gave the reaction, because the present diseases in no way precluded their having or having had a tubercular infection.

Dr. George F. Suker:—With reference to this subject, I think a few words of caution need be said so far as the Calmette reaction is concerned. No doubt it is valuable, yet it has its failures and fallacies, and they are quite numerous. The promiscuous use of this reaction has already been attended with disastrous results, so far as eyes are concerned.

So far as given observations and studies therefrom go, the average practitioner should be very particular in the application of this reaction, in that he should carefully examine the condition of the eye prior to the instillation. If a child had, for instance, a quiescent conjunctival or keratitic phlyctenulosis, then the Calmette injection has a tendency to aggravate these conditions and

that child's eye may become worse in the course of time, consequently losing a good share of its visual activity. I would advise every one to take at stated intervals the vision of patients before and after using it, in order to avoid possible future malpractice unpleasantries.

Should the eye be affected with a moderate trachoma or follicular conjunctivitis, then Calmette's injection is apt to be misleading, for the ensuing reaction is not a typic one, but is a simple catarrhal reaction. Indeed, in order to obtain the proper reaction, the conjunctiva, cornea and sclera must be far from any inflammatory conditions. Then, too, the temperature of the eye to which the reaction is applied is changed. Bear in mind at the same time, though, that the temperature of the normal eye is less than of the general body as a whole, and consequently will not have as high variations; nevertheless, it does vary from 1 to 2 degrees more when the reaction is at its zenith. This can be readily determined by cocainizing the eye and applying a thermometer to the conjunctival sac or the retrotarsal folds with closed lids.

The reaction itself is not at times positive, particularly if the patient has had a previous scleritis, superficial or deep, or an interstitial keratitis. We know perfectly well that syphilitics, if given an injection of tuberculin, will often give a temperature reaction not unlike that which we get in suspected tuberculosis. The same holds true with reference to the Calmette reaction in some of these same syphilitics.

As a matter of caution, I would suggest not to use this reaction too promiscuously without first ascertaining the exact condition of the conjunctiva, as well as cornea and sclera, as disastrous results, so far as I have been able to ascertain in studying statistics, are more numerous than they should be. If, from the figures given in the literature of between 500 and 600 cases, we get a certain percentage in which there is loss or serious involvement of the eyes from this reaction, it is about time we are more careful in using it. I do not know as I would want the Calmette reaction applied to the eye of a young child which has latent phlyctenular conjunctivitis or keratitis, because of the fact that, as ophthalmologists now look upon these two diseases of the eye as being closely related to tuberculosis, if not a veritable modified form, and because a large share of the inmates of the blind asylum come from cases of phlyctenular keratitis. A good many of these children—I do not say all, but quite a few—may not be tuberculous; and, having a phlyctenular conjunctivitis or keratitis, therefore, if we get a reaction, it is not at all diagnostic because the mere instillation of any such toxic agents can start up a similar reaction.

Dr. Ethan A. Gray:—I have been making use of the conjunctival reaction as a means of checking up certain work I have been doing in one of the orphan asylums in this city, the children of which are presumably as healthy as asylum children go.

	Num. Examined.	Reaction. Pos.	Neg.	Doubtful.
Under 2 years, 14 examined.				
Apparently normal	10	0	10	0
Doubtful	3	0	3	0
Presenting evidence of infection	1	0	1	0
Two to 6 years, 25 examined.				
Apparently normal	8	0	8	0
Doubtful	10	0	10	0
Presenting evidence of infection	7	2	5	0
Six to 14 years, 25 examined.				
Apparently normal	5	0	5	0
Doubtful	11	2	8	1
Positively tuberculous	9	3	6	0
Total children examined, 64.				

These children were taken in routine order, not selected in any way, with the idea of determining the extent of latent tuberculosis in this particular institution. The ophthalmo was used as a check, but, in view of the conflicting results in different cases where the same fluid was used, freshly prepared, reacting in those

cases once or twice in which we did not expect it and had made no positive diagnosis, and failing to react in those where we were positive we had a tubercular diathesis, we concluded it would be better to use physical diagnosis to check up the ophthalmo. In this connection I wish to emphasize the point made by Dr. Tice, that more attention should be given to physical diagnosis and less to the character of the ophthalmo reaction. Until we know more about it I shall not instil any more tuberculin into the eyes of children in this institution. Whether we can obviate any of the dangers resulting from the instillation remains to be seen. I do not regard a keratitis nor a catarrhal conjunctivitis, nor an excessive inflammation of the eye, with possibly some interstitial conjunctivitis, lasting from one to two months, as harmless. Dr. Suker has warned us against the use of this particular procedure, and it is a warning that we should heed.

The question of the action of the glycerin content and other products of tuberculin on the eye has been raised. If they are dangerous in the way of producing inflammatory conditions in the eye, I think we should have more reaction in these cases. One per cent. glycerin is of no especial importance. In the cases mentioned we used old tuberculin, 1 per cent., freshly prepared. As a routine measure, I should condemn the use of the ophthalmo reaction. It may be used as other measures are used, in cases of doubt, but, inasmuch as we have in every form of tuberculin diagnosis some doubt expressed, and there is an element of danger attending the ophthalmo reaction, I think it is well to be cautious.

Dr. Frank S. Johnson:—I want to ask Dr. Webb a question. If he does not use the index, how does he guide his therapeutic use of tuberculin? Is he guided in any way by the subjective sensations of the patient? The reason I ask these questions is this: Last year I had a case of tuberculous peritonitis in which the patient could tell quite as accurately as the laboratory man when a dose of tuberculin was required. In another case of tuberculous enteritis in which the patient's trouble resembled dysentery, and who also recovered under the use of tuberculin, the same feature was noted, but was possibly less marked. It seems to me it is quite safe to use that subjective indication as a guide in most cases and especially where it is not feasible to follow the opsonic index closely.

Dr. Clarence L. Wheaton:—I think we have all listened to the papers presented this evening with great interest, and that in bacterial inoculations we undoubtedly possess therapeutic agents of more potency and specific value than anything that has been employed in the treatment of disease. Smithies and Walker, of the University of Michigan, recently reported on the analyses of work by French observers relating to the ophthalmic reaction. One hundred and eighty-five cases clinically tuberculous gave positive reactions 176 times and 9 negative reactions. Of 28 cases, doubtfully tuberculous, 21 gave positive reactions and 7 negative. Of 188 persons suffering from disease not tuberculous and including a fair proportion of normal individuals, 186 gave negative reactions and only 2 were positive.

Levy, of Berlin, reports a positive reaction in 85 per cent. of 41 tuberculous patients and in 60 per cent. of 54 with dubious tuberculosis, while the reaction was positive only in 25 per cent. of 235 non-tuberculous patients.

In the very intense form of reaction following inoculation of the conjunctiva the parts become rapidly involved, the bulbar conjunctiva becomes chemotic. There is marked swelling of the parts and considerable edema of the eyelids, lachrymation is very abundant and there is much purulent secretion, true pains radiate to the temple and forehead. The acute stage may persist as long as eight days and the conjunctiva may not return to normal for a month. It seems to me that such a reaction must be regarded as formidable and not incapable of doing permanent injury to the eye.

The results of these inoculations with a minim of glycerin free tuberculin as mentioned in the original contribution of Calmette are not well enough defined in the light of our present knowledge to warrant the employment by the general practitioner of this method of early diagnosing tuberculosis. If future experimentation in this field of science reveals a single case of impairment of ocular

function, the method should be discarded as absolutely worthless, for I believe we have at our command other methods for the early diagnosis of tuberculosis quite as efficient and less dangerous.

Dr. J. W. Pettit, Ottawa, Ill.:—As my paper is more of a report than a scientific contribution, in closing I will simply take occasion to correct a misquotation on the part of Dr. Klebs. I do not wish to be understood as being opposed to or as in any wise weakening in the matter of sanatorium treatment. The question I wish to raise is this. Shall we accept the state or the municipality as the unit of representation in providing public sanatoria? I am inclined to favor the municipality for the reason that the state seems to me too large a unit of representation. This, however, is not the time or place to discuss this question.

As to the comparison of results of sanatorium treatment, I have heard Dr. Klebs on several occasions use statistics of German sanatoria to prove that the treatment is at least partially a failure. He has made the statement that out of 100,000 incipient cases treated in German sanatoria they only secured 25 per cent. of permanent results. The doctor will correct me if I misquote him. This is so at variance with the reports we usually receive, not only from European, but American sanatoria, that it looks as if there was something radically wrong. In the same connection Dr. Klebs stated that in order to increase the usefulness of the public sanatoria in Germany the time was fixed at about five weeks. This is so short a time in the treatment of tuberculosis that it amounts to practically nothing and I am really quite surprised that they can show even 25 per cent. of results, and for my part I would hardly be willing to accredit the sanatorium with even this small per cent.

In discussing the value of the sanatorium in the treatment of tuberculosis we must bear in mind the great disadvantages under which we are now laboring. The two essentials for successful treatment are either ignored or imperfectly applied. These are early diagnosis and the time element. We secure very few incipient cases, and it is the exceptional patient who remains under treatment the required length of time.

Then, too, we are constantly discussing the treatment of tuberculosis from the physical side. We discuss the patient's disease but fail to take into account the patient himself. In the treatment of tuberculosis the patient is not a passive agent, and the success in any given case very largely depends upon the character, courage and intelligence of the patient himself. The sanatorium treatment must be looked upon as a matter of education, and success turns upon the question of whether or not the patient will accept the opportunities offered. In fact, so much depends upon the patient that I believe it is unfair to quote statistics from charitable institutions to prove the value of the treatment, for the reason that these patients usually come from the lower walks of life. I firmly believe that the extremes of society will not be materially benefited by sanatorium methods. The poor, because of their poverty and ignorance. We may relieve their poverty for the time being, but can not their ignorance to such an extent that they will not go back to their former environment. These patients accept the treatment in such a half-hearted, half-intelligent sort of a way that the permanent results are not very satisfactory. Our care of the extremely poor will protect society by the prevention of infection, rather than in curing the disease. Neither will the other extreme of society be much benefited. For the most part the victims will be the children of rich parents who have not been taught to practice self-denial or self-control. They will be coddled, pampered, spend their time flitting from one health resort to another, and their very opportunities for getting well will be used in such a way as to hasten them to their graves. It is the great middle class, the really useful people, who are benefited. As a rule they are willing to submit to the conditions necessary to secure results. This is the class who are benefited, and whose lives are of most value to the community. The sanatorium treatment is all right if it is carried out by the right kind of people at the right time, and in the right way.

Dr. Webb (closing the discussion):—Replying to Dr. Klebs, the doses of tuberculin were not increased beyond 1/800 mg. I had not heard of the experiments of the Edinburgh writer with cheesy matter to which he refers. The experiments of Much were conclusive as to non-acid fast tubercle bacilli changing into acid fast. He inoculated the non-acid fast into peritoneal cavity of guinea-pigs and was able to demonstrate the change.

Replying to Dr. Butler I do not think one can rely upon carbol thionin as a stain for tubercle bacill. I do not think the Gram a perfect stain for them. I merely wish to show that in highly pathologic sera a lytic influence by changing the tubercle bacillus coat rendered the carbol fuchsin method of staining unreliable. It is probable that in the gonococcus case he quotes there was a mixed infection. In just such cases I have learned it is frequently necessary to use the mixed vaccine and that gonococcus vaccines should not be condemned until used with the vaccines of associated organisms. In our tubercle work we have always studied the question of auto-inoculations before inoculating.

Dr. Hollister's remarks are very much to the point. However, I think he missed the fact I tried to point out that the normals and subnormals are apt to be accurate; therefore, the work on these can stand and only the results in quite pathologic serum is inaccurate.

Replying to Dr. Johnson, it is undoubtedly true that patients themselves can tell when they require another dose of tuberculin. I recall the case of a leper in Wright's clinic who was improving under tuberculin inoculations who very frequently could name his opsonic index before it was taken. We inoculate every seven to ten days, that being the period over which in many cases the high tide of immunity lasts. I am inclined to think that the desire patients have for the next dose is genuine and that it is not suggestion that influences it.

Dr. Tice (closing the discussion):—In reply to Dr. Klebs, in making repeated instillations, the instillation is always made in the opposite eye, never being repeated in the same eye unless more than two are made.

In reference to Wolff-Heisen giving no explanation of the cause of reaction, I referred in my paper to irritation. Dr. Gray has referred to it in his cases and has emphasized the importance of physical examination in addition to the test. The test is not to be depended on solely in making a diagnosis.

Regular Meeting, March 4, 1908.

A regular meeting was held March 4, 1908, with Dr. Charles S. Bacon in the chair. Dr. Julius Grinker read a paper on "The General Aspects of Psychotherapy."* Dr. Gustav Kolischer read a paper entitled "Prolonged Laughing Gas Anesthesia in Surgical Operations." The paper of Dr. Kolischer was discussed by Drs. F. K. Ream, Victor J. Baccus, L. E. Greensfelder, Daniel N. Eisendrath, and the discussion closed by Dr. Kolischer. Dr. Fenton B. Turck read a paper entitled "Chronic Round Ulcer of the Stomach and Duodenum, with Experiments on Dogs; Demonstration with Lantern Slides."* This paper was discussed by Drs. Victor J. Baccus, Albert Goldspohn and Charles S. Bacon.

Dr. F. K. Ream:—I desire to congratulate the essayist for his boldness in advocating a departure from the older lines of anesthesia, backing up his statements by several hundred practical cases. It requires courage to take issue with old lines of practice, and especially to advocate the use of nitrous oxid and oxygen for capital operations hitherto regarded useful only in minor surgery.

In my mind, it is high time the profession take notice of the advancement and wide range of usefulness of nitrous oxid and oxygen. From the fact that leading surgeons all over the United States and abroad are using this form of anesthesia almost exclusively leads me to prophesy that it will be the leading anesthetic of the future. Postoperative pneumonias and renal complications following chloroform and ether anesthesia as expressed by the essayist, to say nothing of the effort on the part of the profession to obscure the real mortality, are sufficient reasons to encourage its speedy adoption.

* For text of papers see pp. 625 and 631.

The profession has taken 100 years to arrive at the present status of this form of anesthesia, and from the results now obtained I believe the near future will reveal astonishing results. One of the largest hospitals in this city is preparing to instal a private plant for generating the gas that the cost may be lessened. This is in response to a demand from the attending surgeons for an unlimited supply. Only this week one of the internes anesthetized a patient for two and one-half hours with nitrous oxid alone. Dr. Charles K. Teter, of Cleveland, reports nearly 400 capital operations ranging from 30 minutes to three hours in duration without the slightest indication of alarm, and as I look over his tabulated cases and find chloroform and ether anesthesia was contraindicated I feel doubly enthusiastic.

Referring to my personal efforts, I am able to report approximately 30,000 administrations principally for the extraction of teeth without a single accident or fatality. About 100 of this number were major operations. I have administered this anesthetic to patients from 1 year of age to 92 years of age and at all stages of pregnancy. My patient at the extreme age was a feeble old lady with a bad heart, for whom I maintained profound anesthesia for one hour and ten minutes. On account of the anesthetic the surgeons had refused for years to remove a large benign tumor involving the parotid gland and large blood vessels of the neck. At no time was the patient in danger of collapse, and in twenty minutes the patient walked to her room, assisted by the nurse. Not a particle of nausea was present. I started the anesthetic with 3 per cent. oxygen and 97 per cent. nitrous oxid and gradually increased the oxygen until at the close she inhaled from 10 to 20 per cent. oxygen. There was marked absence of cyanosis.

The increasing percentage of oxygen I have been able to give my patients leads me to take issue with Dr. Kolischer in his recommendation for a uniform percentage, viz.: 1 per cent. I desire to administer all the oxygen patients will take in so far as it does not prevent anesthesia. Certainly 1 per cent. of oxygen is superior to nitrous oxid alone, but I believe if the doctor will employ an apparatus whereby he can vary the amount of oxygen he will be better pleased.

I have used this anesthetic in obstetrical work with excellent results. The patient is permitted to inhale the gas upon the approach of the pain. About four inhalations will produce analgesia which will not interfere with uterine contraction or the normal course of labor. The gas will be entirely eliminated before the next pain, when the procedure may be repeated. If it is desired to retard labor, a small quantity of chloroform may be combined with the gases.

I thank Dr. Kolischer for calling my attention to statistics. Four million administrations in four years by men of all grades of ability—many were doubtless mere tyros and students.

I am in receipt of a letter from one office in Philadelphia, stating the administrations in that office had reached 270,369 without a single accident or fatality. We have one specialist in Chicago reporting over 100,000 administrations without a fatality or accident.

The principal point of discussion seems to center in the use of oxygen. I have made a number of inquiries, and it is the practice of anesthetists to substitute atmospheric air for oxygen, due, I believe, to imperfect apparatus. The great objection to this substitution is the fact atmospheric air contains a large percentage of nitrogen which is not an oxygenating agent and does not contribute to anesthesia.

Hewitt tells us in his experiments that complete unconsciousness can not be produced with mixtures containing more than 30 per cent. air. The advantage of oxygen over atmospheric air can readily be understood when we know one part oxygen is equivalent to eight parts air and the patient will recover from cyanosis and anoxemic convulsions in that ratio. Furthermore, the atmospheric air of a crowded surgery room is a poor oxygenating agent. We are familiar with Priestley's experiments of placing animals in separate reservoirs containing air and oxygen. Under the latter they lived twice as long as under air. Birds died in oxygen without convulsions; also the heart retains irritability for hours when death takes place in oxygen.

I can not emphasize too strongly the use of morphin preceding gas anesthesia for neurotics, alcoholics and all patients with a well defined antagonism to anesthesia.

In conclusion, surgeons using scopolamin-morphin anesthesia will find the gases an ideal adjunct as a substitute for chloroform.

Dr. Victor J. Baccus:—While abroad last year I had the pleasure of visiting most of the large clinics, and I did not see anywhere in any of the clinics held in Berlin, Vienna, Paris and in London, this nitrous oxid anesthesia used. It is true, they are using the Roth-Drayer apparatus in every clinic I visited, which is a very useful instrument, especially for young internes, and particularly for those who have had no experience in giving anesthetics. One can see the number of minims of chloroform or ether given by this instrument, by means of oxygen pressure tank. Thus the patient receives ether, chloroform and oxygen in the proportion desired.

The next most frequent method of anesthesia which foreign surgeons are using, especially in Berlin and Vienna, is spinal anesthesia. It is also used very frequently by Tuffier of Paris, and while speaking with Sonnenberg on the danger of this form of anesthesia, I inquired as to the number of cases in which he had used it, and he said in about 900 cases, with two fatalities, and in both instances death was due to infection. Tuffier of Paris has used it about 4,000 times without a death. While going around with Professor Lane of Guy's Hospital, London, one of the attending surgeons was using spinal anesthesia in a case of amputation, and we were informed that while he was performing the operation the patient died from respiratory paralysis.

I have been using nitrous oxid gas anesthesia at the Policlinic for six or eight months, at the suggestion of Dr. Nevius, who predicted long ago that nitrous oxid gas was to be the anesthetic of the future. There is now at the Policlinic an interne by the name of Dr. James, who has given a great many gas anesthetics, and he is so familiar with this work that he is possibly one of the best anesthetists in the city. We do not use any oxygen at all, but we use pure nitrous oxid anesthesia, and after an interne has given possibly six or seven anesthesias, he learns the amount of nitrous oxid gas and the amount of air to give the patient, and in this connection I want to mention some of the operations that have been performed under nitrous oxid gas anesthesia. The only thing we have now to contend with is the cost of the gas, because it is more expensive than either ether or chloroform. These are a few of the operations that have been performed with this anesthetic: Case 1, left inguinal herniotomy, an appendectomy and a hemorrhoidectomy. Case 2, nephrorrhaphy with appendectomy through the same wound, cholecystotomy and curettement. Case 3, gastroenterostomy, etc. During the last six months I have performed over 50 major operations under nitrous oxid gas anesthesia.

The technic which Dr. James uses is to put the patient to sleep slowly, and not choke him as we used to do at first. He simply allows a certain amount of the nitrous oxid gas and air and it requires about five minutes to put the patient to sleep. The preparation of the field of operation should be done before the patient is taken to the operation table. We have traced some of these cases with a view to ascertaining the postoperative urinary findings. We have not been able to find any albumin, blood or casts in the urine, following any of these nitrous oxid anesthesias. The patients recover quickly. Occasionally there will be a slight nausea, but the majority of patients wake up before they are taken to their rooms, and they feel much better than they do when they are given general anesthetics.

Dr. Louis A. Greensfelder:—At the Michael Reese Hospital for the past two years or more nitrous oxid gas anesthesia has been employed by a large number of the attending surgeons. At first, the gas was employed without the admixture of oxygen. In spite of giving the anesthetic slowly, if you would obtain that abdominal relaxation which is necessary in a great many of the operations, it is impossible to do so without the patient becoming cyanotic, but with the admixture of oxygen, at about 1 per cent., these patients will go on for one hour

to two hours without exhibiting the least bit of cyanosis, and with complete relaxation of the abdominal muscles. I personally have used it in those cases of hernias where, for instance, the patient was suffering with bronchitis, where the administration of ether or chloroform would have been contraindicated. I have operated on cases where the anesthesia has gone on two hours without any untoward results. I believe this anesthetic is one that will be used more and more, as soon as we have some such apparatus as has been exhibited to-night. We are contemplating making our own oxygen at the Michael Reese hospital, because of the great demand on the part of the patients for gas anesthesia and of the great expense to the patient who wishes to take this anesthetic.

I agree with every assertion that Dr. Kolischer has made, especially in regard to genitourinary and kidney work. In septic cases, in cases of general peritonitis, and appendicular cases, ether anesthesia is unquestionably dangerous, but gas anesthesia is the anesthetic par excellence.

Dr. Daniel N. Eisendrath: I can only endorse everything that Dr. Greensfelder and Dr. Kolischer have said. Our experience at the Michael Reese Hospital has been extremely satisfactory, and I need not call the attention of the members of this society to the necessity of discriminating considerably more than we have done in the past with regard to the choice of anesthetics. We are too apt to take patients as they come in, put them on the operating table and give them the regular anesthetic, trusting entirely to luck. Even though a patient may have a mild bronchitis, we may not have any particular choice in the use of the anesthetic. We do not want to give chloroform perhaps, although we may be obliged to do it.

The apparatus Dr. Baccus spoke of is not being used to the extent that he says it is. I attended many of the French and German clinics while abroad last year, and did not see the Roth-Droyer apparatus used. This apparatus is very complicated and it is one which requires considerable skill to use in giving anesthesia.

Going back to the point where I started, we must have some anesthetic which we can give to people who may have a latent nephritis of which we know nothing until after the anesthetic has been given, as occurred in a case a few weeks ago. A patient was admitted to the hospital who was previously well, apparently. His urine showed only a few hyalin casts and one or two granular casts, and we thought it was safe to give ether. We did not want to give any other anesthetic, because we do not get the relaxation of the abdominal wall. What else should we give? The only anesthetic we have been using is ether. Shall we give him ether? Yes, because it is the anesthetic with which we are most familiar. We give the patient ether; he has acute suppression of urine and succumbs to it. We must use an anesthetic in those cases in which we suspect nephritis on which we can rely. These are the cases in which the administration of nitrous oxid and oxygen mixture is indicated, and suggested by Dr. Kolischer, and when it is given in definite proportion, it is the anesthetic par excellence. I think Dr. Kolischer has rendered a great service in calling the attention of the medical profession to this anesthetic. I believe by using this anesthetic we will have less proportion of postoperative pneumonia.

There is one point brought out by Dr. Greensfelder which I desire to emphasize, and it is one that every practitioner has been confronted with, who has given pure nitrous oxid in cases of laparotomy, for instance, and that is, if you give a patient nitrous oxid without the admixture of oxygen, you are almost certain to be interfered with in your work by the rigidity of the abdominal wall, and that is one great feature where the addition of the oxygen is a great improvement. It has been shown that we can go on with this anesthetic for an hour or two and operate, as in one case I recall now in which we gave it for amputation of the breast; in another one for a difficult laparotomy, the anesthetic was continued for an hour without the least interference whatsoever in regard to muscular rigidity.

Dr. Kolischer (closing the discussion):—I have not much more to say. I would like to emphasize again the necessity of using oxygen with the nitrous oxid

gas. I am sure, if Dr. Baccus keeps on using pure gas in his surgical operations he will have cases of asphyxia. It is not the favorable cases we have trouble with, and inasmuch as we know that death will occur, if we give pure nitrous oxid gas, there is no reason why we should take this chance. As to post-operative complications, I wish to call attention to one point. If I operate on a patient and examine the urine of that patient and find a little albumin, that does not amount to much. The slight amount of albumin may disappear and the patient may stay cured of the albuminuria. The most important complication is the one of acetonuria, especially in diabetes.

As to the rigidity of the abdominal wall in most laparotomies, I will say that I overcome this rigidity, not by the anesthetic, but by the use of a self-retaining retractor devised by Fritsch and Stoeckel, which is nothing else but a speculum inserted in the lower angle of the incision and a weight attached to it by means of a chain; this permanent pull tires out the muscles pretty soon.

There is one exception I would like to make to a statement made by Dr. Eisendrath. I do not think it is right to say that we should use this anesthetic, which is practically without danger, only in cases where we have certain indications, when ether and chloroform are practically excluded. I think we should not use ether and chloroform save in exceptional cases, and reverse the order of Dr. Eisendrath. Nitrous oxid and oxygen anesthesia is the thing to use.

As to the use of this apparatus, if it keeps up to the promise held out, it is the thing to use, because, as Dr. Ream has pointed out, we can gauge and change the admixture of oxygen all the time. We can start with gas, turn off the gas, and then give oxygen, so that the patient may recover from the anesthetic without having any knowledge that such a change was made.

DISCUSSION ON THE PAPER OF DR. TURCK.

Dr. Victor J. Baccus:—I wish to compliment Dr. Turck on his wonderful industry and on presenting such beautiful researches. His experiment has proven the views which have been advanced by a very eminent surgeon, namely, Mayo Robson, who, in speaking on the etiology of ulcer of the stomach, states that in a large proportion of his cases he found that the buccal cavity was loaded with bacteria, secondary to infection of the gums or teeth. He did not say anything absolutely about this, but speaks of the possible bacterial invasion of the stomach mucosa, and giving rise to these ulcers of the stomach. Again, the experiments and the remarks of Dr. Turck on the cecum, descending colon, transverse colon and sigmoid may justify the views recently advanced by Professor Lane, which have appeared in the last issue of *Surgery, Gynecology and Obstetrics.*

Dr. Albert Goldspohn was asked to take part in the discussion. He said: I am not able to contribute anything, but I can not refrain from expressing my profound gratitude at the labor which Dr. Turck has devoted to this subject. There can be nothing done for the recognition, the diagnosis and treatment of disease better than a clear and correct understanding of its etiology. That there is a hazy understanding on this subject in the minds of most practical men hardly needs to be stated. I feel thankful for the privilege of seeing what the Doctor has accomplished.

Dr. Charles S. Bacon:—It is about two years since Dr. Turck presented his first paper at the joint meeting of the Chicago Medical and Chicago Pathological societies on "Round Ulcers of the Stomach." That paper received the endorsement and approbation of our well-known pathologist, Dr. Hektoen, and others, and this continuation of the work in the development of chronic ulcer is so adequately presented that I think the society is to be congratulated on it.

Regular Meeting, March 11, 1908.

A regular meeting was held March 11, 1908, with the President, Dr. Henry B. Favill, in the Chair. Dr. Channing W. Barrett read a paper entitled "The Crime of Gynecology." This paper was discussed by Dr. B. L. Reitman, Dr. Albert

Goldspohn, and the discussion closed by Dr. Barrett. Dr. Daniel N. Eisendrath reported the following cases and exhibited patients: (1) Gunshot wound of the liver; (2) conservative surgery of the fingers; (3) urethral calculus; (4) nasal splint; (5) sarcoma of gluteal region; (6) macroglossia. Dr. William E. Schroeder followed with a demonstration of color photography, illustrated by stereopticon and transparencies showing the teaching possibilities. Dr. Schroeder was followed by Mr. W. F. Willis, who spoke on the technic, including the chemistry and physics of the subject.

DISCUSSION ON THE PAPER OF DR. BARRETT.

Dr. Ben L. Reitman:—Personally, I wish to thank Dr. Barrett for the able and valuable paper he has read. Those of us who are familiar with the Cook County and other hospitals are convinced of the truth of his paper. The evils which exist in these institutions have an economic basis. The surgeons want the cases of gynecologists, because they need them in their business. A doctor who is on the surgical staff of Cook County Hospital is, in all probabality, connected with a medical college, and he must of necessity give a good clinic. He must have the gynecological cases which Cook County affords in order to give good clinics. It must be remembered, however, that the surgeons at the Cook County Hospital are not paid for their time, and they get their returns in giving clinics and they need all of the clinical material they can obtain from the hospital. It seems to me that if we would remedy the existing evil one way would be to pay the attending surgeons and gynecologists at all of our charity hospitals for their service.

Dr. Albert Goldspohn:—I think there is much truth in what the essayist, Dr. Barrett, has said; nevertheless, we must give credit to a considerable number of surgeons who are able to do the surgical part of gynecology quite well. But the mistake comes in thinking that it is only surgery that is required. There an injustice comes to women very frequently. The mistake is made that, in place of special medical treatment, there is either too much operating or that the woman usually gets no help, or she is consigned to the indefinite realm of hysteria, because the surgeon does not know better. To my mind, the seriousness of the problem is this: Gynecology is a very broad subject. It is medical. It is surgical. It is neurological. The gynecological symptoms are so greatly intertwined with specific medical and neurological symptoms that a man must be fairly well versed in these three branches to make a correct diagnosis in all cases. Of course, only such a one can render the best service in the case, who is well versed in everything that is regular in internal medicine and in the ordinary practice of neurology, and he must be a surgeon also. A correct diagnosis in a gynecological case will be obtained best if that case is first gone over medically, then neurologically and, last but not least, gynecologically. Only when we take evidence in that manner will we be able at the end of all these examinations to solve correctly the problem whether certain anomalies we find in the pelvis have probably some evil meaning or not, and to what extent. I contend that the man who operates all over the body as a general surgeon and does good work must necessarily devote most of his time, study and experience to those other parts, and, therefore, he can not, unless he be more than an ordinary man, be so broad as is required to be a correct, scientific gynecologist.

Again, another mistake is this, that gynecology is not all surgery. There is much of it medical, and, if we would be the best help to women, we not very frequently have to make a combination of medical treatment and surgical treatment, either medical first and surgery afterward, but more frequently surgical first, and the medical and neurological treatment following the surgery. The gynecologists who have mistakenly not observed this policy have frequently decided that many a uterus which is somewhat obstreperous had better be removed. This results in slaughter, or in what I consider butchery, which would not be the case if the gynecologist or surgeon recognized efficient scientific local and general medical and neurological methods that can be used to supplement the surgical treatment. For instance, we know that there are numerous cases of old, chronic

metritis, as a displaced uterus with a pathological cervix and diseased appendages, which requires operation. We should surgically correct the interior condition of the uterus, do away with the pathological cervix, correct the displacement by a correct anatomical operation, and reconstruct its appendages. Then we have still remaining a sore, heavy and more or less unhealthy fundus or body of the uterus, which has troubled many men to that degree that they have declared hysterectomy to be the treatment for all such cases. I know that that is a mistake. Those cases can be relieved and restored to health, and the menstrual function and other comforts that it entails can be saved for women. How can this be done? I might mention, among other things, uterine massage and galvanism, and the electrolytic use of iodin. Many cases do not require surgical treatment at all and may be relieved or cured by less radical measures.

Dr. Barrett (closing the discussion):—I have no new points to add. I agree thoroughly with the statement made by Dr. Reitman, that doctors ought to be paid for their services at the Cook County Hospital, but I would be willing to get along without compensation. I also agree thoroughly with what Dr. Goldspohn has said. The question is not whether some surgeons can do good gynecology, because some surgeons can do fairly good operative work. The question is not whether every man who calls himself a gynecologist can do good work. Some of them do poor work. That is true. The question is, What fits the man best to do work, by devoting all his energy to that work, by devoting his time to reading up on matters pertaining to that work and attending medical societies whose papers and discussions are devoted to that line of work, or by keeping away from medical societies and not giving attention to them? Those who give attention to this subject, as a class, will do far better work for science and humanity than those who only practice gynecology as a side issue.

Exhibition of cases: 1, Gunshot wound of the liver; 2, conservative surgery of the fingers; 3, urethral calculus; 4, exhibition of nasal splint; 5, sarcoma of gluteal region; 6, macroglossia, by Daniel N. Eisendrath, M.D., Chicago.

GUNSHOT WOUND OF THE LIVER.

The first case I wish to show you is one of gunshot wound of the liver. This man entered my service at the Cook County Hospital, suffering from a gunshot wound of the abdomen. The charts will illustrate what I have to say very well. This man was shot about 4 o'clock on the morning of Novemebr 25 last with a 44-caliber revolver. The bullet entered the ninth intercostal space close to the angle of the scapula. He was admitted at about 5 o'clock in the morning, and I saw him at half past 7 the same morning, when he was suffering from internal hemorrhage. His pulse was small and rapid. There was evidence of free intraperitoneal hemorrhage in the form of dulness along the flanks, and there was beginning rigidity in the right upper quadrant of the abdomen. On account of the wound of entrance being at the angle of the scapula, at about the ninth rib posteriorly, and feeling the bullet at the ninth intercosal space in the mammary line, we made up our minds, on account of combining that with the symptoms of hemorrhage, he must have a wound of the liver. We did not explore the posterior wound at all. I made an incision through the right rectus muscle from the costal arch downward about a distance of three inches and found upon entering the peritoneal cavity that there was a tremendous amount of clotted and liquid blood coming from the large wound in the right lobe of the liver. This wound of the liver was almost inconceivably large, considering that the patient was still alive. The wound of the liver extended, as this chart shows, and practically divided the entire right lobe into two parts, there being only a shred of tissue at the lower edge of the liver still remaining. The wound was so large that we could put two or three hands directly into it after exposing it in the manner I have described.

The question came up as to whether to suture this wound or to adopt some other method of treatment. On account of having been successful in a previous case by adopting a method which is not generally used by surgeons, I was successful, and that is tamponnade, tamponing the wound with a considerable amount of iodoform gauze, which we did in this case very successfully. I found

it was impossible to tampon the wound from below the costal area. In other words, I was unable to get sufficient gauze to stop the hemorrhage, so that I resected two inches of the ninth rib, where the bullet came out and where the rib was fractured by the bullet, and that gave me direct access to the subphrenic space without opening the pleural cavity. The direction of the bullet is shown here in the second chart, entering the ninth intercostal space posteriorly, traversing the pleural cavity, went through the diaphragm twice, and then through the liver its entire distance. Resecting the costal arch gave me excellent access to the liver. A five-yard strip of gauze was not sufficient to control hemorrhage. We put in a second strip of gauze and finally, in order to check the hemorrhage, it became necessary to put in altogether twenty-five yards of gauze. We kept the gauze in there for two or three days, and on the third day, in attempting to remove some of the gauze, there occurred a tremendous hemorrhage. The patient, however, made an uneventful recovery so far as the abdomen was concerned. Following the healing of this wound, he got an empyema, so that it was necessary to drain the pleural cavity close to the wound of entrance. We found the bullet anteriorly.

This case illustrates the great advantage of tamponing in large wounds, such as this of the liver, after a gunshot or after a crushing injury, such as may follow a rupture of the abdominal viscera. I thought the case might be interesting to you, because of the high mortality attending these wounds, and occasionally it is gratifying to show a patient who has recovered after having sustained such an injury.

CONSERVATIVE SURGERY OF THE HAND.

I want to show this case in order to illustrate a point in the conservative surgery of the finger, something which is not major surgery, yet it comes up occasionally to the general practitioner, and I thought it might be of interest to present this patient to you.

The man is a chauffeur by occupation. He got a little too familiar with the fly-wheel while it was in motion, and sustained a crushing injury of the fingers. The chief points I want to bring out are these: This is the second time I have tried the experiment of making a stump composed of the first phalanx of the first finger, then utilizing the interossei and lumbricales, slipping them into the tendon sheaths and suturing them to the extensor tendons, which gives him more powerful flexion of his fingers than he would have otherwise. It will aid him greatly in the usefulness of his fingers, considering his occupation is that of chauffeur. Four weeks have elapsed since the operation was done, but even at this time union of the tendons has been so good that it gives him good control of the fingers. Another point is this: We had simply nothing to hope for in this case. It looked as if we would have to amputate the third metacarpo-phalangeal joint, but I adopted a plan which I carry out as a routine measure at the Michael Reese Hospital, namely, after the first hemorrhage is checked, we keep on a wet dressing of salicylic solution until the case is through. In that way we keep up nutrition of the flap, prevent sloughing, and consequently we prevent infection.

URETHRAL CALCULUS.

The third case I wish to show is rather unusual. This boy was 5 years of age when he entered my service at the Cook County Hospital, in October or November of last year. He was admitted with a diagnosis of retention of urine. The interne called me up and said his bladder was distended to the level of the umbilicus. I gave him permission to do a suprapubic puncture, which he did and withdrew about 22 ounces of turbid urine. He tried to catheterize this boy, but could not pass a soft rubber catheter. When I saw the boy, his bladder was distended to the level of the umbilicus. I saw a couple of drops of yellowish pus exuding from the meatus. I thought at first the case was one of retention of urine in a child. I tried to insert a catheter, a soft rubber catheter, but was not successful in so doing. I then tried to insert a metal catheter, and in the posterior portion of the urethra I encountered a clicking sound typical of a calculus, and found

upon further examination that this urethral calculus was firmly imbedded either in the membranous or prostatic portion of the urethra—it was hard to tell which. Having gotten this clicking sound from the calculus, the question came up what to do. The usual method would be, of course, to try to dislodge this calculus and remove it from the urethra. This was found impossible, and the next question was to do a perineal section. I decided not to do that, because I had an experience with one boy who had a rupture of the urethra with a fracture of the pelvis. I then thought of doing an external urethrotomy, but, after further consideration, we thought the best thing to do was to do a suprapubic operation, and this turned out to be the best procedure, although it seemed more radical, because when we opened this an enormous quantity of urine escaped. The urine was very turbid, showing that the calculus had undoubtedly been there for some time and had caused infection. We found simply by passing a sound through the anterior urethra that we could bring the sound into the bladder and extract the calculus with ease. It took several months for the wound to heal on account of the septic condition. Finally healing took place and the boy was discharged from the hospital four weeks ago.

EXHIBITION OF NASAL SPLINT.

A number of times I have been called to see cases of fracture of the nasal bones, and, as everybody has had experience with them, you know how difficult it is to keep the fragments in position, especially in those cases of fractures or dislocations at the junction of the lateral cartilages of the nose and nasal bones, so that I tried the use of a splint which was spoken of in one of the text-books on surgery and known as the Cobb-Coolidge nasal splint, and I thought the members of the society would be interested in seeing this splint. I have had a little modification of it made which works much easier than the one described in this book. I want to show you how quickly it can be fitted. It has a head band like an ordinary head mirror has, and this fits on both sides of the nose so that you can regulate the pressure. Patients can wear it with a moderate amount of pressure on it, in cases of dislocation of the lateral cartilages or nasal bones. I let patients wear this splint, say, for half an hour in the morning and half an hour in the evening.

I have used it in three cases, and Dr. Greensfelder, my colleague, has used it in two cases, and both of us have obtained excellent results by combining it with the correction of traumatic deviations of the septum. The only modification I have made in this splint is this little bridge which you see.

ROUND CELL SARCOMA.

I want to show you a specimen from a case which entered my service at Cook County Hospital last Friday. This man was detained in the Joliet penitentiary for some crime or other, and I learned that about four months ago a surgeon removed a tumor about the size of a baseball, and that since that time there has been a recurrence of the tumor at the place where it was removed, and that this tumor has grown in the last four months to its present enormous size. I saw him outside of the hospital on Friday in the stages of extreme anemia from hemorrhage due to ulceration of the tumor. On account of the tremendous size of the tumor and the cachexia that was present, there was no question as to what should be done, and the only thing we thought of was to amputate the limb, which we did. The case is very interesting on account of the enormous size of the tumor. We do not often find tumors attaining such a large size—at least in this locality—but this tumor was allowed to grow without anything having been done for the patient. We have not examined it microscopically as yet. We hope to have a microscopical report of it to-morrow. Professor Herzog thinks it is a small round cell sarcoma growing not from the periosteum, but in all probability from the cellular tissue, either from the intermuscular septum or the muscle itself. It undoubtedly started from the gluteal region and then grew forward.

MACROGLOSSIA.

I want to show you this little boy, whose case is one of great rarity and one about which operative interference is still a question. I tried once to operate on it, but not very successfully. It is a case of macroglossia or lymphangioma of two types, of the capillary type and of the venous type. I saw him for the first time three years ago. The condition has improved spontaneously considerably more than anything I could do for it. Three years ago I tried the method of puncturing the tongue at a number of different places. I find that the boy's tongue has decreased considerably in size since that time, but you can still see the patches of ichthyosis on it and the little vesicles which are the lymphangioma of the capillary type. It is an extremely rare condition and hardly represents what it did six months or a year ago. Then the tongue was enormous in size. The boy is now 7 years of age, but when I first saw him he was only 4 years old. I have done absolutely nothing since that time when, as I have told you, I made multiple punctures with the thermocautery, punctured the little vesicles and made deeper punctures into the tongue.

CHICAGO UROLOGICAL AND CHICAGO MEDICAL SOCIETIES.

A joint meeting of these societies was held March 18, 1908, with the president of the Chicago Urological Society, Dr. J. A. Patton, in the Chair. Dr. Robert H. Herbst read a paper entitled "The Serum Treatment of Gonorrhea, with Report of Cases." This paper was discussed by Drs. Wm. T. Belfield, Victor J. Baccus and, in closing, by Dr. Herbst. Dr. B. C. Corbus read a paper on "Fistulæ of the Male Urethra Anterior to the Prostate." Dr. H. S. Gradle demonstrated a rapid clinical stain for the *Spirocheta pallida*. This was discussed by Drs. Adolph Gehrmann, Fred G. Harris, and the discussion closed by Dr. Gradle.

Dr. Robert H. Herbst read a paper entitled "The Serum Treatment of Gonorrhea, with Report of Cases."

DISCUSSION.

Dr. Wm. T. Belfield:—As I have had general supervision over the work in the Rush College clinic, to which Dr. Herbst refers, and have watched carefully several of those cases, I know that he has stated the results attained there with perfect accuracy. I have obtained similar results in private cases, some fifteen in number, in which I have had the privilege of using this serum through the courtesy of the makers. It is striking that a remedy which has such a pronounced and almost uniform effect on so-called gonorrheal rheumatism, should have virtually none in the proven gonococcus infections, including the urethra and epididymis, and some of the joints; yet in these joint cases, which we have been in the habit of calling, on clinical grounds solely, gonorrheal rheumatism, the results have certainly been very pronounced and very gratifying. It is probably twenty years since we learned that the mere opening of the abdominal cavity sufficed for the mitigation, sometimes the apparent cure, of tubercular peritonitis; while tuberculosis of mucous membranes—the bladder, for instance—is not thus influenced. It is possible that there is some such difference in the relations of the gonococcus to serous and mucous membranes.

The reaction which he has described has not been observed in the cases I have treated in the same degree. Usually there has been no reaction whatever, but I have made the injections into the muscles and not subcutaneously as he has done. Possibly the difference in local effect is explained in that way, as I have been using the serum from the same source.

Dr. Victor J. Baccus:—I wish to report a successful case similar to those described by Dr. Herbst, which was treated by serum obtained from Dr. Torrey, of New York. This case occurred in the practice of a professional friend, Dr. W. Vary, and I was called in consultation to see the patient who gave a definite history of gonorrhea existing about four months. He developed arthritis of the right wrist, which was not extensive, but the swelling extended along the extensors and flexor tendons to the middle of the forearm. There was no doubt as to the diagnosis of gonorrhea being correct, since gonococci were found in the

secretions. As other measures had failed, it was decided to use the serum, which was injected subcutaneously. We were very much alarmed twenty-four hours later when we were called to the house of the patient and found extreme edema extending from the wrist up to the shoulder. At about that time Dr. George W. Webster had reported a case in *The Journal* of the American Medical Association in which there was a violent reaction from the use of the serum, and, as we could not reassure the patient in any way that he would eventually be all right, Dr. Webster was consulted, as he was probably the first to use it in this city. The symptoms in this patient lasted about forty-eight hours, then there was a gradual subsidence of them. In addition to the swelling present, there was elevation of pus and temperature which lasted for forty-eight hours; with two additional injections the patient made a perfect recovery of the gonorrheal arthritis, but the serum had absolutely no effect on his posterior urethritis.

Dr. Herbst (closing the discussion):—I should like to ask Dr. Baccus if the serum was taken from rabbits or from the ram.

Dr. Baccus:—We wrote to the Cornell Laboratory and got it direct from them. This was about three months ago.

Dr. Herbst:—Probably you got rabbit serum. The reaction from the early serum they made was quite severe. I have not seen any reaction to cause alarm in many of my injections, and I have used as high a dosage as is necessary. How much did you use, Dr. Baccus?

Dr. Baccus:—We used 2 c.c.

Dr. Herbst:—I will say that this serum is supplied from the experimental laboratory of Parke, Davis & Company.

DISCUSSION ON THE PAPER OF DR. GRADLE.

Dr. Adolph Gehrmann:—I wish to compliment Dr. Gradle if he has found a reliable and rapid clinical stain for the spirochete pallida and one that is as satisfactory as he has described. The amount of work that has been put on this subject is large, and if one looks over the literature and sees the number of different stains that have been tried we will find that the workers who have been busy with this subject have met with great difficulty in finding a stain that is entirely stable. I have tried Goldhorn or Nocht methods more than others, finding that they are, at least for spirilla spirochete and such organisms as we find belong to this type in the sputum, for instance, more satisfactory than the Giemsa method. We desire a rapid method of staining the organisms a deep color, so that the amount of hunting over slides now required can be avoided.

Dr. Fred G. Harris:—I have not seen Dr. Gradle's preparations, but I have worked many hours in trying to stain the spirochete with the Goldhorn, the Giemsa and other methods, and the results have been absolutely negative. I have also had some experience with the ultramicroscope. With the newer forms of the ultramicroscope it is easy to find the spirochete. It is a matter of a few minutes' time, and it is a great clinical advantage. The spirochete can be found in practically every case of syphilis in the primary lesion and in a larger number of the secondary lesions. I have not been able to find them in the circulating blood. They have been found so seldom in that medium, and if by his method Dr. Gradle has been able to find them in the circulating blood it is a great advance.

Dr. Gradle (closing the discussion):—In regard to finding the spirochete in the circulating blood, the citation of one case I have examined may prove of interest. A woman came to the skin dispensary with a marked secondary rash just beginning. She had had the primary lesion some two months previously, so far as we could tell. As she had just come from the gynecological dispensary, it was known there were no noticeable lesions of the genitalia. At that time she began to menstruate, and I examined the menstrual blood, and in it found several unquestionable spirochete. I believe they came from the circulating blood rather than from any lesion of the genital tract.

CHICAGO SURGICAL SOCIETY.

Regular Meeting, held Dec. 6, 1907.

A regular meeting was held Dec. 6, 1907, with the President, Dr. A. J. Ochsner, in the chair. Dr. John B. Murphy read a paper on "Tuberculosis of the Patella."

DISCUSSION.

Dr. Arthur Dean Bevan was much impressed with what Dr. Murphy said about placing the joint in a condition in which it will resist any possible infection by the chemical inflammation which precedes the operative treatment. He recalled one case of tuberculosis of the knee-joint in which the patella was the primary focus. In that case he found a single bean-shaped focus in the patella, with an extension of the process to the synovial membrane, and the operation consisted merely in opening the joint, sawing through the patella, finding the focus, removing it, and making a clean dissection of the synovial membrane, with iodoformization, and then closure of the divided patella. The result was one of the best which he has had in operative work for tuberculosis of the knee.

Dr. William J. Mayo, of Rochester, Minn., by invitation, recalled one case of apparent primary tuberculosis of the patella in which the patella was removed with a very good result following. One thing that struck him was the statement by Dr. Murphy that primary operation for fracture of the patella has become obsolete. He would agree that the intermediate operation is unsafe, but he has not seen any difficulty from doing the primary operation in certain cases seen a few hours from the time of the injury, before there is joint effusion, and where there is but little injury to the knee-joint outside of the patellar fracture. In the intermediate stage, say from twenty-four hours to the end of a week, fortunate results sometimes occur following operation. He said he would try the formalin-glycerin treatment suggested by Dr. Murphy in cases of chronic hydrops of the knee-joint.

Dr. Wm. E. Schroeder does not hesitate to operate on fractures of the patella as soon as possible, and does not recall ever having had an unfavorable result by so doing. In the cases produced by indirect violence there seems to be no indication for delay. Here we would only expect a hemorrhage to take place which can be prevented by an immediate operation. In the cases in which there have been effusions, he has not hesitated to operate as soon as convenient, with equally good results. The circular suture was used, and the material is catgut, wire or silk, and with seemingly good results.

Dr. Charles L. Scudder, of Boston, has had no personal experience with tubercular osteomyelitis of the patella, but recalls a case of double fracture of the patella in which the bones were so comminuted and literally smashed that they could be rendered of no use to the individual, but in which both patellæ were removed and the fracture used to connect the quadriceps with the patellar tendon. In this case the functional usefulness of both knees was excellent.

Dr. Daniel N. Eisendrath was interested in the case shown and result following excision of the patella, in that it confirms his observations of one case of excision of the patella, combined with an arthrectomy of the knee-joint, in which the power of extension was as perfect as in Dr. Murphy's case. Last spring he was consulted by a patient who sustained a fracture of the patella two years before, and who had separation of two and a half inches between the fragments of the patella. As there was a palpable deformity, the question arose as to whether an operation would be of some avail. He tested the power of extension, which was almost perfect. Koenig states that among 720 cases of tuberculosis of the knee-joint the patella was involved fifty times, and of these fifty cases thirty-three were primary.

Dr. M. L. Harris has not seen a case of primary tuberculosis of the patella. In all the cases he has seen in which the patella had been involved, the other bones of the knee have likewise been implicated. Although he has removed the patella two or three times, the operations have always been more extensive than simply the removal of the patella, because other bones were involved.

Regarding fractures of the patella, it has been his rule to operate on practically all cases. He operates on all cases unless there is some distinct contraindication. It has likewise been his rule to wait until the stage of effusion has passed, or until it begins to subside. This varies from two or three days to a week. If a fracture of the patella is operated on at once, the joint will fill up with fluid, very much increase the effusion, and tend to separate the fragments. Another reason is that the joint, he believes, and as Dr. Murphy states, is less likely to infection because the blood, which always escapes into the joint, is one of tne best agents we know of to produce a leucocytosis. Hemorrhage into one of the cavities of the body will produce a general leucocytosis within a few hours.

POST-TRAUMATIC ANGIO NEUROTICEDEMA.*

GEORGE DE TARNOWSKY, M.D., CHICAGO.

Attending Surgeon Chicago Union Hospital and Ravenswood Hospital.

In presenting for your consideration to-night this brief report of an unusual but not rare disease, I wish to state that I have no new theories to propound regarding its causation or pathology. Quincke first described it as acute circumscribed cutaneous edema in 1882. It has in turn been called giant urticaria, hydrops hypostrophus, epidermolysis bullosa hereditaria, angioneurotic edema and Quincke's disease.

Etiology: This affection is distinctly a family affection. Neurotic predisposition, migraine, Graves' disease, intoxication, thermic agents and trauma have all been held responsible for the onset of the edemas.

Pathology: The view most generally held is that we are here dealing with a vasomotor trophic neurosis.

Symptoms: The chief symptom is the presence, on the skin or mucous membrane of a circumscribed swelling which develops rapidly, is rather sharply defined, and does not pit on pressure. The overlying tissues are pale, but may be red, and the patient complains of a feeling of tension and sometimes of intense itching. The extent of the swelling varies from the size of a split pea to that of a large plate. As a rule it declines and vanishes after a few hours or days. No part of the body is exempt. Acute edema of the larynx may produce alarming symptoms.

Treatment: Management of the neurosis and careful regulation of the diet are the prinicpal points insisted upon. Atropin, strychnia, arsenic and electricity have all been recommended.

Prognosis: The course of the disease is exceedingly chronic, but the prognosis as regards life is good.

CASE.—Mrs. X., age 34, married nine years. No children. Patient states that she has never wanted children and has so far succeeded in avoiding pregnancy. She is a society woman in good circumstances and has never had any family worries or responsibilities. She comes of a healthy family in which neuroses have apparently gained no foothold. There is no history of similar edemas in her family obtainable. Her general health has always been of the best, and, barring a few diseases of childhood, she has never had to consult a physician until recently. Fourteen months ago, while alighting from a street car, she slipped and sprained her right ankle. In falling she also struck her upper cervical vertebra against the curbstone, causing no external wound, but severely jarring her spine. Recovery from the sprain and cervical hyperesthesia was slow. Two months after the accident patient became provoked about some household matters and lost control of her temper. Within an hour of this event she began to notice a swelling and paleness on the right side of her chin and lower lip. This swelling was not accompanied by pain, but there was marked stiffness of the parts involved, and the lower lip became everted on the affected side.

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* Read before the North Shore Branch of the Chicago Medical Society, March 3, 1908.

Since that time these edemas have recurred at irregular intervals. On two or three occasions in the past year they have seemed to precede menstruation; as a rule they are closely associated with mental disturbances. The patient tritely expresses the situation by saying: When I feel ugly I get ugly.

Examination.—Patient is a well developed, robust looking woman. Her appetite is good, bowels regular, menses normal, and she rarely suffers from insomnia. The thorax and abdomen gave negative findings. The right ankle is anatomically and functionally normal. The lower three cervical spines are slightly tender on light palpation, but deep pressure is negative and there is no nerve disturbance to be demonstrated. The superficial and deep reflexes are somewhat exaggerated. The buccal and naso-pharyngeal cavities are normal. There was no edema present at the time of the first examination, but the history and description of her ailment were so graphic that a tentative diagnosis of angioneurotic edema was made and patient was requested to report to my office at the first reappearance of her trouble. In the interim she was given capsules containing strychnia, atropin and arseneous acid three times daily. Six weeks elapsed, and I had concluded that the patient had been led to consult some other physician, when she arrived at my office and stated that she had had a violent altercation with her maid that same morning. The change in her appearance was startling. The right side of the chin and right side of the lower lip were enormously swollen and waxen in color; the tissues were tense, but there was very slight pitting on pressure. The surrounding tissues were normal. While the edema slightly overlapped the median line, it was manifestly a unilateral condition. I may add here that in subsequent attacks the edema has been on the right side with one exception, when the left side of the upper lip became the site of the swelling. Patient was very much depressed mentally and bitterly deplored her lack of control over her temper. The pulse, temperature and respirations were normal.

Galvanization of the affected area was tried and patient warned of the danger of mental excitation. The next three months were melancholy ones, both for physician and patient. Edema succeeded edema, some swellings lasting from three to six hours, others from twenty-four to thirty-six hours. Various remedies were tried without avail; vibratory massage, faradization and galvanization were given a trial and discarded. The patient's *modus vivendi* was overhauled, changed, rearranged and changed back again; she again took up her music seriously after having discarded it for years; she took to walking, golfing and tennis—she followed my directions implicitly, but derived no benefit from any of my suggestions. About four months ago she came to me one morning and again begged for relief from her edema which was then quite pronounced; she had to attend some social function that same afternoon and did not have the moral courage to exhibit her deformity. Adrenalin chlorid, given internally, per os, then suggested itself to my mind for the first time, on account of its well-known action on the vaso-constrictors. She was given a prescription containing grs. 1/32, or 30 minims of the 1 to 1,000 solution per dose, to be repeated in two hours if needed. An hour after taking the first dose she telephoned me that her chin and lip were normal in size, but that her entire face was rather blanched and that she felt slightly dizzy. Her edema did not reappear for several weeks, and was then again successfully and rapidly controlled by the same dose of adrenalin chlorid. She now carries her solution with her wherever she goes, and uses it at the first indication of edema. She has taken, under my supervision, as large a dose as one-twentieth of a grain, or forty minims of the 1 to 1,000 solution. Given in this amount, the entire face blanches rapidly and she complains of slight headache with vertigo. There is a decided slowing of the pulse, with increased arterial tension lasting from one to two hours. There have, so far, been no pernicious after effects. It is generally believed that adrenalin chlorid is not cumulative in its effects and never involves the danger of forming a habit. Never having heard or read of suprarenal therapy being used in angioneurotic edema, I present this preliminary report of my case and hope that it may be productive of further investigation along the same lines.

DEKALB COUNTY.

The DeKalb County Medical Society met at DeKalb, April 24, 1908. The regular meetings are the last Fridays in January, April, July and October. The officers elected were as follows: President, A. M. Hill, Genoa; vice-president, C. B. Brown, Sycamore; secretary-treasurer, C. H. Mordeff, Genoa; delegate, C. B. Brown, Sycamore; board of censors, C. W. Gould, Fairdale, O. J. Brown, DeKalb, and R. T. Smith, DeKalb.

HAMILTON COUNTY.

The Hamilton County Medical Society met in regular session Tuesday, April 14, 1908, with nearly all the members present. Dr. Wheeler, of Broughton, and Dr. Bozarth, of Walpole, were visitors. The following officers were elected for the next year: President, Dr. I. W. Asbury; first vice-president, Dr. H. W. Dale; second vice-president, Dr. I. I. Hall; secretary-treasurer, Dr. C. M. Lyon. Dr. C. E. Osborn, of Broughton, was recommended by the Board of Censors for membership and was unanimously elected a member. The president appointed Drs. S. W. Williams, J. J. Hassett and P. M. Nation as the Board of Censors. Interesting papers on Typhoid Fever, by Dr. H. E. Hale, and Puerperal Sepsis, by Dr. I. I. Hall, were read and both were freely discussed by the members. Dr. W. W. Hall was elected delegate to the meeting of the state society. The next meeting of the society will be held at Broughton on Tuesday, July 13, 1908.

HANCOCK COUNTY.

The regular annual meeting of the Hancock County Medical Society was held at Carthage, April 6, 1908. The following officers were elected: President, Dr. H. H. Sherwood, Bowen; vice-president, Dr. G. E. Pumphrey, Ferris; secretary, Dr. C. L. Ferris, Carthage; treasurer, Dr. R. R. Loomis, Burnside; censor, Dr. L. N. Tate, Carthage; delegate (state), Dr. J. L. Jenkins, Carthage. The program was as follows: Surgical Diseases Due to Pneumonia, Dr. S. C. Stremmel, Macomb; Addison's Disease, Dr. H. R. Folckemer, Bowen; An Incipient Case of Tuberculosis, Dr. S. M. Parr, Fountain Green; Fistula in Ano, Dr. Wm. Blender, Carthage.

KNOX COUNTY.

The thirteenth semi-annual meeting of the Knox County Medical Society was held at the courthouse, Galesburg, Thursday, April 23, Dr. G. S. Chalmers, Galesburg, in the Chair. Meeting was opened with a presidential address by Dr. Chalmers and the following papers were read: Pertussis, Dr. W. B. Gray, Altona; Importance of Early Diagnosis in Obstruction of the Bowels, Dr. E. C. Franing, Galesburg; Treatment of General Suppurative Peritonitis, Dr. Charles Davidson, Chicago; Milk, Dr. Ben D. Baird, Galesburg. A lunch was served at the Galesburg Club rooms, followed by a banquet at which the following toasts were given: The Doctor and the Dominie, Rev. J. Percival Huget; The Doctor and the Barrister, Hon. Eugene Welch; The Doctor and the Dear People, Dr. L. R. Ryan. The following officers were elected: President, Dr. C. F. Lytle, Altona, Ill.; vice-president, Dr. J. E. Cowan, Galesburg; secretary-treasurer, Dr. F. G. Hall, Galesburg; delegate (state), Dr. C. B. Horrell, Galesburg; alternate, Dr. G. A. Longbrake, Galesburg; board of censors, Dr. Wm. O. R. Brady, Galesburg, Dr. D. J. Evans, Galesburg, and Dr. C. F. Bradway, Abingdon, Ill. The meeting was enthusiastic and interesting throughout.

OGLE COUNTY.

The Ogle County Medical Society held a regular quarterly meeting in the lecture room of the Polo Public Library, and was called to order at 2 p. m. by

the president, J. M. Beveridge, of Oregon. The secretary being absent, L. A. Beard, of Polo, was chosen to act for this meeting. There were present Drs. Krebbs, Powell, Houston, Maxwell, Judson, Beard and Louise Keator, of Polo; Aiken, of Foreston; Roe and Beveridge, of Oregon; Brubaker and Price, of Mt. Morris; Brigham, of Brookville; McPherson, of Hazelhurst; Arnold, Clark and Rideout, of Freeport, and Owens, Murphy, Sickles and Law, of Dixon. Dr. Murphy presented a paper on Chemical and Physical Diagnosis of Gastric Ulcer, with an outline of treatment, both medical and surgical. Dr. Clark gave a carefully prepared and very comprehensive paper on Some Phases of Chronic Suppurative Otitis Media. Dr. B. A. Arnold spoke on Cholelithiasis and also presented a large number of specimens of gallstones illustrating different cases. Dr. E. A. Sickles gave a paper on The Ultimate Effects of Lacerated Cervix and Perineum. Dr. W. J. Rideout gave a paper on Ocular Headache, especial attention being given to what is known as reflex headache and methods of diagnosis. Dr. Brigham presented a case for diagnosis of a very large and deep facial ulcer of long standing. The papers and clinical case were freely discussed by the physicians present, after which the society adjourned to meet in Oregon July 15, 1908.

PIKE COUNTY.

A meeting of the Pike County Medical Society was held at the office of Dr. H. T. Duffield, in Pittsfield, Thursday, April 23, 1908. The following members were present: Drs. W. F. Shastid, J. Smith Thomas, W. H. Garrison, R. O. Smith, G. U. McComas, H. T. Duffield, L. S. Lacy, R. H. Main, George A. Humpert, J. Estill Miller and B. B. Dunn. Visitor, Dr. F. Johnston, of Milton, Ill. Report of committee appointed on Oct. 31, 1907, to investigate the postgraduate work in county societies was received and the committee discharged. Dr. F. Johnston, of Milton, and Dr. J. R. Pollock, of Nebo, were admitted to membership in the society. Dr. W. H. Garrison read a paper on Some Observations in the Treatment of Pneumonia. Dr. B. B. Dunn presented some notes and remarks on Gallstones. Dr. J. Smith Thomas read a paper on Puerperal Eclampsia and reported some cases. Dr. H. T. Duffield made some remarks and demonstrations on Fads and Freaks in Gynecology. Dr. George A. Humpert presented a paper on the subject of Calomel. The report of the secretary-treasurer for the fiscal year was read and approved. The following officers were elected for the ensuing year: President, Dr. L. S. Lacy, Pittsfield; vice-president, Dr. J. Estill Miller, Pittsfield; secretary-treasurer, Dr. R. H. Main, Barry; delegate, Dr. J. Smith Thomas, Pleasant Hill; alternate, Dr. George U. McComas, New Canton.

RANDOLPH COUNTY.

The Randolph County Medical Society held its annual session in Sparta, April 14, with 19 physicians in attendance. Dr. H. L. LeSaulnier read a paper entitled "Childbed Infection." Discussion led by Dr. H. L. Gault. Dr. J. L. Wiggins read an interesting and instructive paper on hernia and reported a number of cases which he recently treated by surgical means. Dr. A. L. Brands reported a case of tuberculosis which he cured by fresh air and sunshine. Dr. C. W. Lillie read a paper entitled "Some Aspects of the Tuberculosis Question." Dr. D. S. Booth read a paper entitled "The Psychic Treatment of Disease." This paper was a brief exposé of the principles of mental healing, the author classifying the recognized legitimate methods of impressing the mind into (1) suggestion made upon the subconscious mind while the patient is in a hypnotic sleep; (2) suggestion made upon the conscious mind during the waking state, and (3) persuasion. The trend of the paper was to show that the tendency of the advocates of mental healing was to ignore the dependence of mind upon matter; hence they fail to recognize the now well-known physiologic fact that "the brain is the organ of the mind, and that mental operations are possible only in

and through the brain," mind being the result of the functioning of the brain, just as electricity is the product of physical agencies. Dr. H. C. Adderly delivered the annual president's address. In an able manner he pointed out the advantages which the general public as well as the medical profession derives from the work done by a live county medical society. Officers for the ensuing year were elected: H. L. Gault, president; A. L. Brands, vice-president; C. G. Smith, secretary and treasurer.

SOME ASPECTS OF THE TUBERCULOSIS QUESTION.

C. W. Lillie, M.D., East St. Louis, Ill.

(Author's Abstract.)

The apparent indifference to the great fatality of tuberculosis as compared to the almost fanatical excitement regarding the presence of other contagious and infectious diseases is touched upon. Deaths from consumption, it is claimed, are due to neglect on the part of some one "or, what is more probable, on the part of many." The popular, and to some extent the professional belief, that consumption is incurable is claimed to be due to the late diagnosis usually formerly made, but does not now prevail to such an extent because it is recognized early enough to treat, as Hippocrates suggested, "from the beginning." Early diagnosis is the hope of the human race. There are two reasons for this: First, it enables us to cure our patient, and, second, it removes another source of infection which, if neglected, might cause many exposures. Of the early signs of the disease, the changes in the breath sounds, altered percussion note, râles, increased pulse, increased temperature, loss of weight, tired feeling, increased nervous irritability, are mentioned as significant, and such as require a most careful investigation that any other disease giving the same or part of the same symptoms may be excluded. It is urged that if tuberculosis is present the patient should be taken into the confidence of the doctor; that in case of suspected tuberculosis it is often advisable that the patient be informed of the fact in order that his hearty cooperation be secured. Advertising of "cures" for consumption in the lay press is most earnestly condemned. It is strongly insisted that "good food is the only tissue builder." An "amazing feature" is that cities, counties and states take so little interest in the care of the tubercular poor. That attention to this would remove many consumptives from shops, stores, bakeries, dairies, households and other places where they are continually exposing others to the contagion; that so many in the "servant class" are tubercular that practically every person employing labor in any form will subject themselves to danger of infection. It is insisted that the care of the tubercular poor is a public duty, and that its cost would be one of the best investments any community could make. Allusion to epidemics of smallpox which never cause more than a small fraction of the deaths now continually due to consumption, and the excitement attendant upon them, is commented on. The Glackin bill passed by the Illinois Legislature is commended and a hope is expressed that many communities will take advantage of its provisions. It is also urged that the local sanitarium should meet with greater favor than any one remote from the home of the patient. It is pointed out that there will still be many who can not be treated in sanitaria, and that these should have the best "home treatment," and that for many patients this is even better than sending them from home. "Drug treatment" is not to be encouraged, though careful medical supervision is necessary, and drugs are often necessary to meet certain indications. Change of climate is not advised. The secret of success lies in the improvement of nutrition, and of the things which contribute most to this plenty of nutritious food, rest of body and mind, abundance of fresh air day and night, are the essentials. A brief outline of the treatment of certain conditions is given in the paper, but they are matters of detail which can not well be rendered in abstract. The tendency of the paper is decidedly optimistic, and allusion is made to the general interest in the subject by the laity.

HERNIA. REPORT OF CASES. DEDUCTIONS.

J. L. Wiggins, M.D., East St. Louis, Ill.

(Abstract.)

In this paper the author recites the histories of four cases operated on by him recently, which aptly illustrate conditions resulting from the two types of hernias classed as acute or traumatic and chronic. The two traumatic cases are practically parallel. Both followed an accident, leaving no doubt as to whether the rupture was of traumatic origin *per se* or whether a hernia previously undiscovered existed, giving rise to symptoms, only after the reception of the injury. In the chronic cases, each of which had existed over a long period of years, although unrecognized as such, symptoms followed closely upon addition to the hernial sac of other abdominal viscera.

The author reiterates the findings of Coley, Berger, McCready and others relative to the congenital weaknesses and pathological conditions found in a long series of abdominal operations. The result of Murray's 200 postmortems, in which 47 cases were found with peritoneal diverticulæ, is also extensively quoted, the fact being emphasized that, while many might go through life performing ordinary duties without mishap, yet upon receipt of unusual violence or pressure a potential hernial sac develops into a hernia.

In conclusion, the author states that "in every case of hernia in which the force applied is not sufficient to cause a rupture of muscle fibers and fascia there existed a preformed sac, and a further force sufficient to cause rupture at any of the hernial orifices would cause it at any point of the abdomen," but "that were it not for the injury said potential hernial sac might never have received its contents, and consequent morbidity have been escaped."

ROCK ISLAND COUNTY.

The annual meeting of the Rock Island County Medical Society was held at the Harper House, Rock Island, Tuesday evening, April 14, 1908. Roll call showed 26 members present. Mr. Phil Mitchell, of Rock Island, was present by invitation and described a pneumatic splint he has recently invented and had patented, the principle of the splint being a flat, inflatable rubber bag which is wrapped about the part to be immobilized. A non-elastic sheath surrounds the whole. By inflation of the bag, as much or as little pressure as is desired may be produced upon the splinted member. Mr. Mitchell claims for the splint convenience and comfort, in addition to efficiency. The demonstration was received with interest by the society and the splint was freely discussed, the consensus of opinion being that Mr. Mitchell has hit upon an idea destined to be of value in surgical practice. Mr. Mitchell was accorded a vote of thanks and elected to honorary membership in the society. During the business session Dr. B. J. Lachner, of Rock Island, was elected to membership and Dr. B. E. Jones to honorary membership. Election of officers for the ensuing year resulted as follows: President, Dr. T. J. Lamping, Moline; first vice-president, Dr. W. H. Ludewig, Rock Island; second vice-president, Dr. M. S. Dondanville, Moline; secretary, Dr. H. L. Yontz, Moline; treasurer, A. E. Williams, Rock Island. The retiring president, Dr. S. B. Hall, will represent the society at the state convention in May.

STARK COUNTY.

The Stark County Medical Society met in Toulon on April 14, with the following members present: Dr. J. R. Holgate, Wyoming; Dr. W. D. Chrisman and Dr. W. C. Mitchell, Bradford; Drs. M. T. Ward, L. L. Long, E. B. Packer and W. T. Hall, Toulon; Dr. D. F. Stewart, Elmira, and Dr. C. Berfield, Castleton. Dr. Mitchell read a very interesting paper on the Summer Diarrheas of Children, and Dr. Berfield on the Conduct of Normal Labor, and both papers were well

presented and discussed. The following officers were elected: President, Dr. J. R. Holgate, Wyoming; vice-president, Dr. C. Berfield, Castleton; secretary-treasurer, Dr. D. F. Stewart, Elmira; censors, Dr. M. T. Ward of Toulon, Dr. J. S. Wead of Wyoming, and Dr. C. Berfield of Castleton; delegate, Dr. M. T. Ward, Toulon; alternate delegate, Dr. R. King, Wyoming; member of Medicolegal Committee, Dr. E. B. Parker, Toulon. After a lengthy discussion on the question of insurance examination fees and the pernicious habit of physicians bidding for pauper practice, the society adjourned to meet in Toulon on the second Tuesday in October.

D. F. STEWART, Secretary.

WABASH COUNTY.

The regular meeting of the Wabash County Medical Society was held Tuesday, April 28, 1908, 3 p. m., at Dr. Schreck's Hall, Mt. Carmel, Ill. Meeting was called to order by the president, six members being present as follows: Drs. R. J. McMurray, St. Francisville; C. E. Gilliatt and J. J. McIntosh, of Allendale, and Drs. J. B. Maxwell, S. W. Schreck and W. E. Mercer, of Mt. Carmel. Dr. J. J. McIntosh reported a case of occipital meningocele, four months old, with photographs, and promises a detailed report of same later. Dr. S. W. Schreck exhibited a fetus representing the anencephalus type of monstrosity. Dr. C. E. Gilliatt read a very interesting paper on the Dietetic Treatment of Dyspepsia, recommending that more attention be given to the subject of dietetics in our colleges and emphasizing the value of the non-rigid enforcement of the rules of diet by the general practitioner. Dr. J. B. Maxwell presented the Treatment of Cholera Infantum in a clear, concise manner and, with discussion and experiences related, will no doubt be beneficial to those present during the coming hot season. The application of Dr. Matina T. Brian, of Bellemont, having been received and recommended by the Board of Censors, on motion, was elected to membership by acclamation. Dr. R. J. McMurray, of St. Francisville, and Dr. J. J. McIntosh, of Allendale, were elected delegates to the Illinois State Medical Society.

WAYNE COUNTY.

The Wayne County Medical Society met at Cisne in the office of Dr. C. O. Truscott, Thursday, April 30, 1908. President Dr. F. Bean was not present, and Dr. W. M. Johnson was elected chairman. Election of officers for the ensuing year: President, Dr. W. M. Johnson; vice-president, Dr. N. J. Hall; secretary-treasurer, Dr. J. P. Walters; delegate to the state convention, Dr. J. F. Sinclair; alternate, Dr. N. J. Hall; censors to be appointed by president when needed. Annual dues were paid by Drs. W. M. Johnson, C. E. Johnson, C. O. Truscott, J. F. Sinclair, N. J. Hall and J. P. Walters. The name of Dr. Ed E. Roberts, of Mt. Erie, was proposed for membership and he was regularly elected. The noon hour having arrived, Dr. Truscott invited all present to his residence, where an excellent dinner awaited us, of which we all partook heartily. In the afternoon Dr. Truscott read an interesting paper on Influenza, and Dr. Walters reported a case of Delayed Resolution in Pneumonia, both of which were freely discussed by all present. It was the unanimous decision of the members present that Dr. Truscott send in his paper to THE ILLINOIS MEDICAL JOURNAL for publication. Adjourned to meet at Fairfield, Thursday, July 16, 1908.

J. P. WALTERS, Secretary.

NEWS OF THE STATE.

PERSONAL.

Dr. Thomas A. Woodruff has been elected president of the Calumet Club.

Dr. H. R. Marsh, La Hogue, has returned to Alaska as a medical missionary.

Dr. Edward A. Fischkin has been elected president of the Jewish Civil League.

Dr. Edward F. Garraghan has returned after a five weeks' trip to the Pacific Coast.

Dr. Otto T. Freer has been elected a member of the Royal Society of Medicine of London.

Dr. Charles K. Unkrich, Monmouth, has recovered from his recent attack of appendicitis.

Dr. Gustav Kolischer was operated on May 2 for appendicitis and is reported to be doing well.

Dr. and Mrs. Ewing have gone abroad for a wedding trip and will return to Lincoln August 1.

Dr. Thomas J. Robeson, who has been critically ill with pneumonia, is now reported to be convalescent.

Dr. Ralph E. Neidringhaus, Granite City, is seriously ill with typhoid fever at the home of his father-in-law in St. Louis.

Mr. B. G. A. Moynihan, chief surgeon of the Leeds (England) Infirmary, delivered an address at a special meeting of the Chicago Medical Society, May 14.

Dr. Will B. Peck, Freeport, coroner of Stephenson County, has started for Europe, and Dr. Moses M. Baumgartner has been appointed deputy coroner during his absence.

Dr. J. Allen Patton, of Chicago, has recently accepted the position of assistant medical director of the Prudential Life Insurance Company of Newark, N. J. The Doctor and his family have moved to Newark, N. J.

Prof. August Martin, Berlin, Germany, who visited Chicago this week, delivered an address before a joint meeting of the Chicago Medical Society and Chicago Gynecological Society, May 13, and held clinics at several hospitals.

Drs. Frank Billings, Chicago; Vaclav H. Podstata, Elgin; J. L. Greene, Hospital Gillette, Jacksonville; William L. Athon, Anna and George A. Zeller, South Bartonville, were appointed delegates to represent Illinois in the National Conference of Charities and Corrections, held in Richmond, Va., May 6-13.

NEWS.

It will be worth your while to look at the Want Ad. Department.

Do not fail to make your "wants" and "for sales" known in our Want Ad. Department.

Dr. Weller Van Hook, of Chicago, has resigned the chair of surgery in Northwestern University Medical School.

The Want Ad. Department is proving a great success. Numerous inquiries have been received in response to the advertisements.

Dr. A. N Richards, of the College of Physicians and Surgeons of New York City, has been appointed professor of pharmacology in Northwestern University Medical School.

Dr. A. W. Meyer, of the University of Minnesota and formerly of Johns Hopkins, has accepted the professorship of anatomy in Northwestern University Medical School.

On April 18 the annual banquet and meeting of the German Medical Society was held at the Bismarck Hotel, Chicago, after which a vaudeville entertainment was given.

Dr. J. W. Bodkin, of Virden, was found guilty in the County Court at Carlinsville, May 1, of the charge brought against him by Miss Anna Regan. Dr. Bodkin will appeal.

The first annual charity for the benefit of Oak Park Hospital given in the Oak Park Club April 21, under the auspices of the medical staff of the institution, netted almost $2,000.

On April 22 a benefit performance was given at Orchestra Hall, Chicago, for the benefit of the Home for Convalescent Women and Children, the net receipts of which were about $2,000.

Dr. Willis C. Stone is said to have been fined $25 and costs, April 28, by Municipal Judge Maxwell, for striking a boy who persisted in building a bonfire near the physician's home.

At a meeting of the Canton Physician's Club, May 1, it was decided to accept the invitation of the Misses Graham to take charge of the program in connection with the laying of the corner-stone of the new Graham Hospital. The corner-stone was formally laid May 6.

As a result of the competitive examination for the position of internes in the Cook County Hospital, the following medical schools had successful candidates: Rush Medical College had 15, Northwestern University Medical School, 13, and College of Physicians and Surgeons, 5.

Dr. John B. Murphy, of Chicago, has resigned as professor of surgery and co-head of the department of Rush Medical College, and has accepted the professorship of surgery, head of the department, in Northwestern University Medical School and the position of attending surgeon at Mercy Hospital.

The annex to Mercy Hospital recently completed at a cost of $250,000 was taken in, May 7, by the hospital and will be formally dedicated June 1. The new building is a five-story, fireproof structure, containing space for the administration offices, reception and waiting rooms and 90 private rooms for patients.

The Medical Association of the Southwest will hold its next annual meeting in Kansas City, Mo., Oct. 20 and 21, 1908. This medical association is composed of members from the following five states: Kansas, Arkansas, Oklahoma, Texas and Missouri. Kansas City is an ideal convention city, being the second largest city in the territory of the association, and, being amply supplied with hotels, there will be no difficulty in accommodating the visiting members. The committee of arrangements is even now actively at work making plans for taking care of those who attend. The secretary, Dr. F. H. Clark, of El Reno, Oklahoma, is preparing a very strong program, and this, together with Kansas City's popularity as a meeting place, will swell the number of attendants above what it has been at any previous meeting. Entertainment will be furnished in abundance, especial provisions being made for the visiting ladies. Keep the date open and arrange your business so you can attend. Dr. John Punton, 532 Altman Building, Kansas City, Mo., is chairman of the committee on arrangements, and will be glad to answer any communication relative to the meeting.

SOCIETY NOTES.

At the April meeting of the Tazewell County Medical Society the following officers were elected: President, Dr. Carl G. Muehlmann, Pekin; vice-president, Dr. Harry V. Bailey, Pekin, and secretary-treasurer, Dr. Edger E. Kilby, Mackinaw.

At the annual meeting of the East St. Louis Medical Society, April 13, Dr. Ato C. Houch was elected president; Dr. Charles S. Skaggs, vice-president; Dr. Henry A. Cables, secretary, and Drs. Carl A. W. Zimmermann, Henry Hansen and William S. Wiatt were elected censors.

The Jersey County Medical Society held its regular meeting April 9, 1908. The following officers were elected for the year: President, Dr. A. K. Van Horn; vice-president, Dr. H. R. Gledhill; secretary and treasurer, Dr. A. S. Hunt. Dr. A. K. Van Horn was also elected delegate.

At the annual meeting of the Rock Island County Medical Society the following officers were elected: President, Dr. T. J. Lamping, Moline; first vice-president, Dr. Ludewig, Rock Island; second vice-president, Dr. M. S. Dondanville, Moline; secretary, Dr. H. L. Youts, Moline; treasurer, Dr. A. E. Williams, Rock Island.

The Wayne County Medical Society met at Cisne April 30, 1908. The following officers were elected: President, Dr. W. M. Johnson; vice-president, Dr. N. J. Hall; secretary-treasurer, Dr. J. P. Walters; delegate to the state convention, Dr. J. F. Sinclair; alternate, Dr. N. J. Hall. Censors to be appointed by president when needed.

A meeting of the Pike County Medical Society was held at Pittsfield April 23, 1908. The following officers were elected for the ensuing year: President, Dr. L. S. Lacy, Pittsfield; vice-president, Dr. J. Estill Miller, Pittsfield; secretary-treasurer, Dr. R. H. Main, Barry; delegate, Dr. J. Smith Thomas, Pleasant Hill; alternate, Dr. George U. McComas, New Canton.

The regular meeting of the Hancock County Medical Society was held at Carthage April 6, 1908. The following officers were elected: President, Dr. H. H. Sherwood, Bowen; vice-president, Dr. G. E. Humphrey, Ferris; secretary, Dr. C. L. Ferris, Carthage; treasurer, Dr. R. R. Loomis, Burnside; censor, Dr. L. N. Tate, Carthage; state delegate, Dr. J. L. Jenkins, Carthage.

The Cass County Medical Society has elected the following officers for the ensuing year: President, Dr. John W. Huston, Virginia; vice-president, Dr. R. H. Garm, Beardstown; secretary, Dr. J. A. McGee, Virginia; treasurer, Dr. C. M. Hubbard, Virginia; board of censors, Dr. George Bley and Dr. C. E. Souse, of Beardstown, and Dr. J. G. Franken, of Chandlerville.

The Hamilton County Medical Society met in regular session April 14 and the following officers were elected: President, Dr. I. W. Asbury; vice-president, Dr. H. W. Dale; second vice-president, Dr. I. I. Hall; secretary-treasurer, Dr. C. M. Lyon, and board of censors, Drs. S. W. Williams, J. J. Hassett and P. M. Nation. The next meeting of the society will be held at Broughton on Tuesday, July 13, 1908.

The regular quarterly meeting of the Mason County Medical Society convened in Mason City April 6, 1908. The following officers were elected: President, Dr. C. W. Cargill, Mason City; vice-president, Dr. H. O. Rogier, Mason City; secretary-treasurer, Dr. E. E. Rhorabaugh, San Jose. Drs. E. W. Paul of Forest City, W. R. Grant of Easton, Nelson A. Wright of Manito and B. C. Graves of Topeka were elected new members of the society.

The Stark County Medical Society met in Toulon on April 14, 1908. The following officers were elected: President, Dr. J. R. Holgate, Wyoming; vice-president, Dr. C. Belfield, Castleton; secretary-treasurer, Dr. D. F. Stewart, Elmira; censors, Drs. M. T. Ward, Toulon, P. S. Wead, Wyoming, and C. Berfield, Castleton; delegate, Dr. M. T. Ward, Toulon; alternate delegate, Dr. R. King, Wyoming; member of the Medicolegal Committee, Dr. E. B. Packer, Toulon.

The thirty-fourth annual meeting of the Central Illinois District Medical Society was held April 28 at Pana under the presidency of Dr. Frank P. Auld, Shelbyville. The following officers were elected: President, Dr. Frank P. Auld, Shelbyville (re-elected); vice-president, Dr. Don W. Deal, Springfield; second vice-president and treasurer, Dr. John N. Nelms, Taylorville; secretary, Dr. Roscoe C. Danford, Pana (re-elected), and censors, Drs. Darwin D. Barr, Taylorville; Jacob Huber, Pana; William J. Eddy, Shelbyville; Ben B. Griffith, Springfield, and Frederick J. Eberspacher, Pana.

PUBLIC HEALTH.

Twelve cases of smallpox are reported in Virginia.

Fairbury reports 9 cases, all under strict quarantine.

No new cases have occurred in Chenoa for four weeks.

Five cases of smallpox are reported in one family in Elgin.

Whooping-cough is reported to be epidemic in Cortland.

The Oak Street School, Elgin, was closed April 10 on account of smallpox.

On April 16, for the first time since last summer, Peoria was without a case of smallpox.

Five families in La Harpe have been placed under quarantine on account of scarlet fever.

The Supreme Court is said to have declared that the state law which makes vaccination compulsory is illegal.

The 16 police ambulance surgeons of Chicago, on April 25, donned the new uniform prescribed by the health commissioner.

Dr. Thomas H. Griffiths, inspector of the State Board of Health, was sent to Monee, April 20, to investigate a reported outbreak of smallpox.

Dr. R. Scoda, charged with practicing medicine without a license, is said to have been found guilty and fined $20, April 30, in Judge Scovel's court.

The State Board of Health, at a special meeting, held in Chicago, April 25, revoked the certificate of Dr. Jabez Clifford Casto, late of Decatur, on account of unprofessional conduct in connection with the publication of fraudulent testimonials in the daily newspapers of Decatur.

Dr. Levi J. Rhea, health officer of La Harpe, states that scarlet fever and not smallpox has been prevalent in La Harpe. Since March 30 only one case of scarlet fever has been reported, and this gives no cause for alarm. All the cases have been of mild type and the total number does not exceed 35.

During the week ended April 25, 10 smallpox patients were sent to the Isolation Hospital, Chicago, three of whom were from Evanston, Ill., and eight of whom contracted the disease from the same source, an unvaccinated colored boy with a mild type of smallpox. At present there are 15 cases of smallpox remaining at the hospital.

Among the few bills passed by the House of Representatives last week was one appropriating to the State Board of Health $3,000 for special research into the cause and prevention of tuberculosis, and a second appropriating $1,000 for the treatment and care of indigent persons afflicted with hydrophobia. This latter was introduced at the instance of the State Board of Health.

The ordinance to regulate hospitals drafted by Dr. George Hunt, of the Health Department, has been recommended for passage by the council committee on health. The proposed ordinance provides for an advisory board of three experts whose duties shall be to regulate hospitals, provide requirements for new institutions and otherwise supervise places where the sick are cared for.

At a special meeting of the State Board of Health, held April 25, the board, by a formal resolution, approved of the proposition to subject all physician applicants for a state license to a practical examination, covering one day, in addition to the written examination, which requires three days for completion. Owing to press of work the details were not ar-

ranged, but it is probable that the plan will be put into operation with the October (1908) examination.

The mutual organization of Chicago and neighboring cities to promote the further purification of Lake Michigan as a water supply was completed at a meeting held in Chicago April 18, at which Dr. William A. Evans, health commissioner of Chicago, was elected president; Prof. Edward Bartow, of the University of Illinois, Urbana, secretary; Dr. Frank W. Shumway, Lansing, secretary of the State Board of Health of Michigan, treasurer, and Drs. William A. Evans and Perry Schurtz, Grand Rapids, Mich., and Mr. C. D. Hill, of the Chicago Board of Local Improvements, with other members to be chosen later, executive committee.

The Department of Health of Chicago has submitted plans to the Board of Education to increase the efficiency of the public and parochial schools of Chicago by raising the standard of health among the 400,000 pupils. The department is desirous of establishing a complete mental and physical inspection bureau in the schools. The purpose is to have expert examination of all the children and if any mental or bodily defects are found to give such medical aid as will improve conditions. The plan is to have 100 doctors attend to work in the schools. These medical men could go into the schools of the city and examine from 10 to 20 pupils each day. Whenever a physical defect was found, treatment would be given and the parents advised as to the future attention of the child. It is also suggested that nurses be appointed to follow up each case and see that the parents obey instructions.

The Bulletin of the Illinois State Board of Health gives the following clinical report on antitoxin administered: "Nineteen hundred and thirty-nine clinical reports of the administration of the antitoxin furnished by the State Board of Health have been received by the board from physicians throughout the state during the period from Oct. 12, 1907, to Jan. 31, 1908. Of the 1,939 injections given, 748 were for immunizing of persons who had been exposed to diphtheria. The remaining 1,191 constituted curative treatments for persons suffering from diphtheria. Through these 1,191 injections 702 persons in various stages of the disease, from the first to the tenth day of the membrane, were treated. Complete recovery resulted in 659 of the 702 persons treated. There were 43 deaths, or a death rate of 6.11 per cent. of the total number having the disease. In connection with the death rate, it should be noted that the first dose of antitoxin in some of the cases which resulted fatally was not given until as late as the tenth day of the membrane. In the majority of the fatal cases, antitoxin treatment was not begun until the third or fifth day of the membrane. Here we desire to again call the attention of the physicians of Illinois to the fact that the State Board of Health has established in the 102 counties in the state nearly two hundred stations, where the refined and concentrated diphtheria antitoxin furnished by the board may be obtained free of charge for use among the poor and rich alike."

The Illinois State Board of Health announces, in its January bulletin, the scope of the work which the laboratory can do: "The receipts during the past few months of several pathologic specimens, with requests for examination, has led us to again state what we have already stated in these columns, that the laboratory of the State Board of Health does not make pathologic examinations. The laboratory was established to render more efficient the public health supervision of the state and has, up to this time, confined itself to the diagnosis of communicable diseases. Specimens from patients supposed to be suffering from tuberculosis, diphtheria, malaria and typhoid fever are examined, without cost, on the application of any health officer or physician. In the majority of instances the examination of pathologic specimens has no bearing whatever upon the prevention of communicable disease or the protection of the lives and health of the people. There are many and excellent private laboratories to which this class of work legitimately belongs. It is quite probable that, within a very few years, the scope of the State Board of Health Laboratory will be materially increased, but the new work undertaken will doubtless be in the same direction as that now done by the board. It is not at all improbable that rabies will afford an important branch of laboratory work, nor that, with the rapid advancement of medical science, scarlet fever and smallpox may be susceptible of prompt and accurate laboratory diagnosis.

"The laboratory of the State Board of Health does not examine specimens of milk or of any other food. Such specimens should be referred to Hon. A. Hanby Jones, State Food Commissioner, Manhattan Building, Chicago. Samples of water are examined by the laboratories of the State Water Survey at Urbana, through a joint arrangement between the State Water Survey and the State Board of Health. In answer to many inquiries we will say that diphtheria cultures may be sent through the mails in the containers furnished by the State Board of Health, which are made in accordance with the requirements of the postoffice department. There is no law prohibiting the transmission of diphtheria cultures through the mails. Samples of sputum may be sent in the especially devised containers furnished by the State Board of Health, or in an ordinary liquid mailing tube, providing that when the latter is used a few drops of carbolic acid be added to the sputum. First-class postage should be paid on specimens of diseased tissue transmitted through the mails."

NEW INCORPORATION.

The Resthaven Sanitarium has been incorporated at Elgin by Drs. George F. Washbourne, Elgin, and Richard Foster, Chicago, with a capital of $35,000.

CHANGE IN LOCATION.

Dr. John Murray has removed from Carbon Hill to Joliet.

Dr. E. R. Van Meter, of Elkhart, has removed to Springfield.

Dr. William Louis Wilson has removed his office to 5533 Madison Avenue, Chicago.

Dr. John Edwin Rhodes has changed his residence to 5045 Washington Avenue, Chicago.

Dr. E. C. Spitze has removed from East St. Louis to Grand Avenue and Olive Street, St. Louis, Mo.

Dr. Joseph M. Patton, of Chicago, has taken an office at 92 State Street, Suite 910 Stewart Building.

Dr. George S. Park, of Varna, on account of his health, has sold his practice and removed to Haskell, Colorado.

Dr. F. D. Hollenbeck announces the removal of his office to 100 State Street and his residence to 4411 North Ashland Boulevard, Chicago.

Dr. William C. Willard has discontinued his office hours in the Marshall Field Building and hereafter will confine them to his residence in Kenilworth and his office in Evanston.

Dr. F. G. Harries wishes to announce that he is now associated with Dr. B. C. Corbus and that hereafter his practice will be limited to the treatment of diseases of the skin and of the genito-urinary system. Office, 407 Schiller Building, 103-109 Randolph Street.

MARRIAGES.

Charles Marvin Fox, M.D., to Miss Cora Monroe, both of Chicago, May 6.

John Joseph Egan, M.D., to Miss Theckla Gensler, both of Chicago, April 20.

Martin Olson, M.D., Chicago, to Miss Inga Aagot Rovel, of Elgin, Ill., April 22.

Francis Marion Ewing, M.D., and Miss Mabel Stokes, both of Lincoln, April 20.

Raymond J. Nate and Miss Geraldine Ogden, both of Chicago, were married at Jacksonville April 30.

Nathaniel Curtis Rogers, M.D., Rockford, Ill., to Miss Florence Marie Williams, of Chicago, April 25.

DEATHS.

Charles Wilbur Carrier, M.D., Chicago Homeopathic Medical College, 1877; died at his home in Desplaines, Ill., April 16, aged 58.

Sarah J. Hogan, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1886; died at her home in that city, April 23, aged 83.

Elias Cornelius Guild, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; died at his home in Wheaton, Ill., April 23, aged 76.

JAMES H. EMERY (years of practice, Ill.), 1878; for forty years a practitioner of Blandinsville, Ill., died at his home in Newkirk, Okla., April 28, aged 76.

SAMUEL R. GRAY (years of practice, Ill.), 1877; for forty years a practitioner of Edgar County, Ill., died suddenly at his home in Chrisman, April 30, from heart disease, aged 70.

T. W. WILLIAMS, M.D., Casey, Ill., died at Hot Springs, Ark., a few weeks ago. He lived at Casey all his life and had been actively engaged in the practice of medicine for many years.

OSWAL EVANS BAKER, M.D., College of Physicians and Surgeons, Keokuk, 1890; of Dunlap, Ill.; died in St. Francis Hospital, Peoria, April 26, from surgical shock, two days after an operation, aged 57.

JOHN MILLS, M.D., of Beecher, a pioneer practitioner of Shelby County, died May 3, 1908, at the age of 84 years. For forty years Dr. Mills practiced medicine in Shelby, Effingham and Fayette counties, most of his work being done on horseback, as highways were almost unknown.

JOHN B. LEITZELL, M.D., Pennsylvania Medical College, Gettysburg, 1853; a member of the Illinois State and Stephenson County Medical societies; died at his home in Dakota, Ill., April 25, from asthma and lung disease, after an illness of several weeks, aged 79.

WILLIAM F. WERGEN, M.D., College of Physicians and Surgeons, Chicago, 1904; formerly of Lead, S. D.; one of the medical assistants at the Ottawa (Ill.) Tent Colony for Tuberculosis; died at the home of his parents in Ottawa, April 16, from tuberculosis, after an illness of more than three years, aged 28.

J. SANDERSON CHRISTISON, M.D., New York University Medical College, New York City, 1877; an alienist and criminologist of Chicago who appeared as expert in a number of celebrated cases; died in his apartments in Chicago, April 8, from gas asphyxiation, aged 58. The coroner's verdict was that the physician came to his death by his own hand.

ARTHUR MELVIN LEE, M.D., Medical Department, University of Nashville, Tenn., 1878; a member of the Illinois State and Jackson County Medical societies; a veteran of the Civil War; surgeon to the Southern Illinois penitentiary, Chester, for three years; a member of the legislature in 1896, and at various times a member of boards of pension examining surgeons; died at his home in Carbondale, April 2, from influenza, after an illness of two months, aged 68.

ANDREW MCINTOSH, M.D., of Allendale, died April 11, 1908, aged 73 years, of cerebral hemorrhage. He had practiced his chosen profession for nearly fifty years within one and a half miles of the place of his birth. He was a member of the Wabash County and Illinois State Medical societies. He was also a member of the American Medical Association for more than thirty years, and had served as coroner of Wabash County for

twelve years. Dr. McIntosh was the second graduate in medicine in Wabash County, having graduated from the Cincinnati College of Medicine and Surgery in 1869.

CARLTON E. STARRETT, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; Rush Medical College, 1893; a member of the Association of Military Surgeons of the United States and Association of Military Surgeons of the State of Illinois; captain and assistant surgeon of the Third Illinois Infantry, U. S. V., during the Spanish-American War, serving with that command in Porto Rico; major and surgeon, Illinois National Guard, assigned Third Infantry; surgeon to St. Joseph's Hospital, Elgin; died in St. Luke's Hospital, Chicago, May 1, from diffuse suppurative meningitis, after an illness of one week, aged 43. He was given a military funeral at his home in Elgin, May 3, with full ceremonial, three companies and the hospital corps of the Third Infantry participating.

BOOK NOTICES.

A PRACTICAL GUIDE TO THE EXAMINATION OF THE EAR. By Selden Spencer, A.B., M.D., Instructor of Otology in the Washington University; aural surgeon to the Martha Parsons Free Hospital for Children. With an introductory chapter by H. N. Spencer, M.D., LL.D., Professor of Otology in Washington University. C. V. Mosby Medical Book and Publishing Company, St. Louis, 1908.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM. By Otto T. Freer, M.D., Professor of Rhinology and Laryngology, Chicago Policlinic, Assistant Professor of Diseases of the Nose, Throat and Chest, Rush Medical College. Fifty pages—twenty-four original illustrations. Published by *The Journal of Ophthalmology and Oto-Laryngology*, 100 State Street, Chicago. Price, 50 cents.

This booklet is Dr. Freer's latest and only full description of the submucous operation which he has, perhaps, done more than any other man to develop.

THE PHARMACOPEIA AND THE PHYSICIAN. A series of articles which originally appeared in *The Journal* of the American Medical Association, discussing the chief substances in the United States Pharmacopeia, classifying them according to their uses and describing their methods of combination and how they may take the place of many proprietary preparations for which extravagant claims have been made. By Robert A. Hatcher, Ph.G., M.D., Assistant Professor of Pharmacology, Cornell University Medical School, New York, and Martin L. Wilbert, Ph.M., Apothecary to the German Hospital, Philadelphia. Second revised edition. American Medical Association, Chicago, 1908. 404 pp. Cloth, flexible cover. Price, $1.00.

This book is a digest of the U. S. Pharmacopeia. It has been published with a view of emphasizing the importance of and elaborating on those pharmacopeial preparations with which the physician should become thoroughly familiar in order that he may prescribe fearlessly and effectually. Throughout the book specimen prescriptions are given as examples of the best combination and form in which the drug can be dispensed. The special pharmacologic action which the various drugs possess and the best way of administering them is explained. In those cases where a certain preparation is not miscible with the ordinary solvents, attention of the reader is directed to the fact, and a statement follows that capsules, powders, emulsion or alcoholic solution, etc., is recommended as the best form of exhibition.

The physician who gives this book a thorough study will possess a practical working knowledge of all important official preparations so that he can extemporize prescriptions with precision, accuracy and absolute confidence.